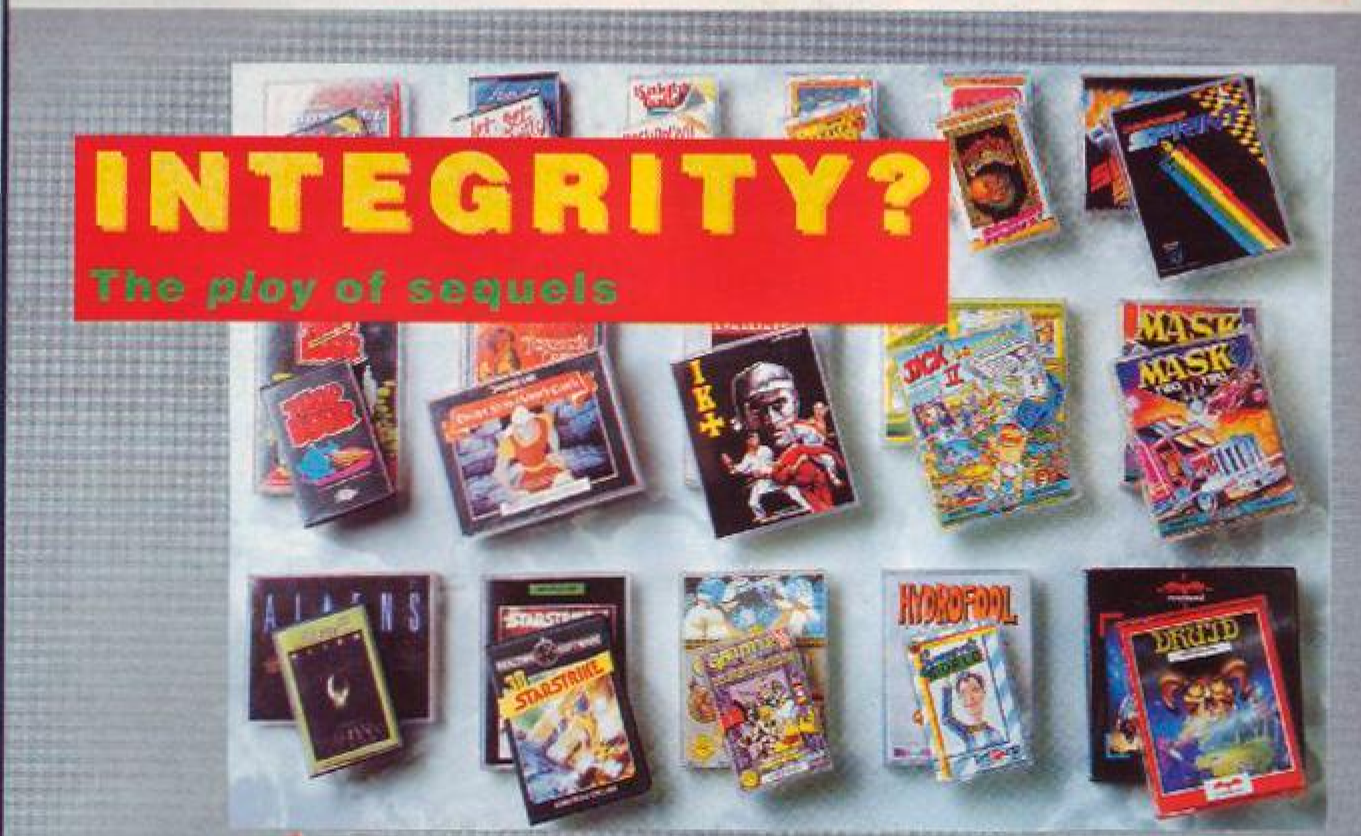
BRITAIN'S LEADING MAGAZINE FOR THE AMSTRAD CPC 464, 664 AND 6128

No. 35 ● AUGUST 1988 ● £1.25

NOT an official Amstrad publication!!

AMSTRAD ACTION

THE MOULD-BREAKING MAGAZINE FROM FUTURE PUBLISHING



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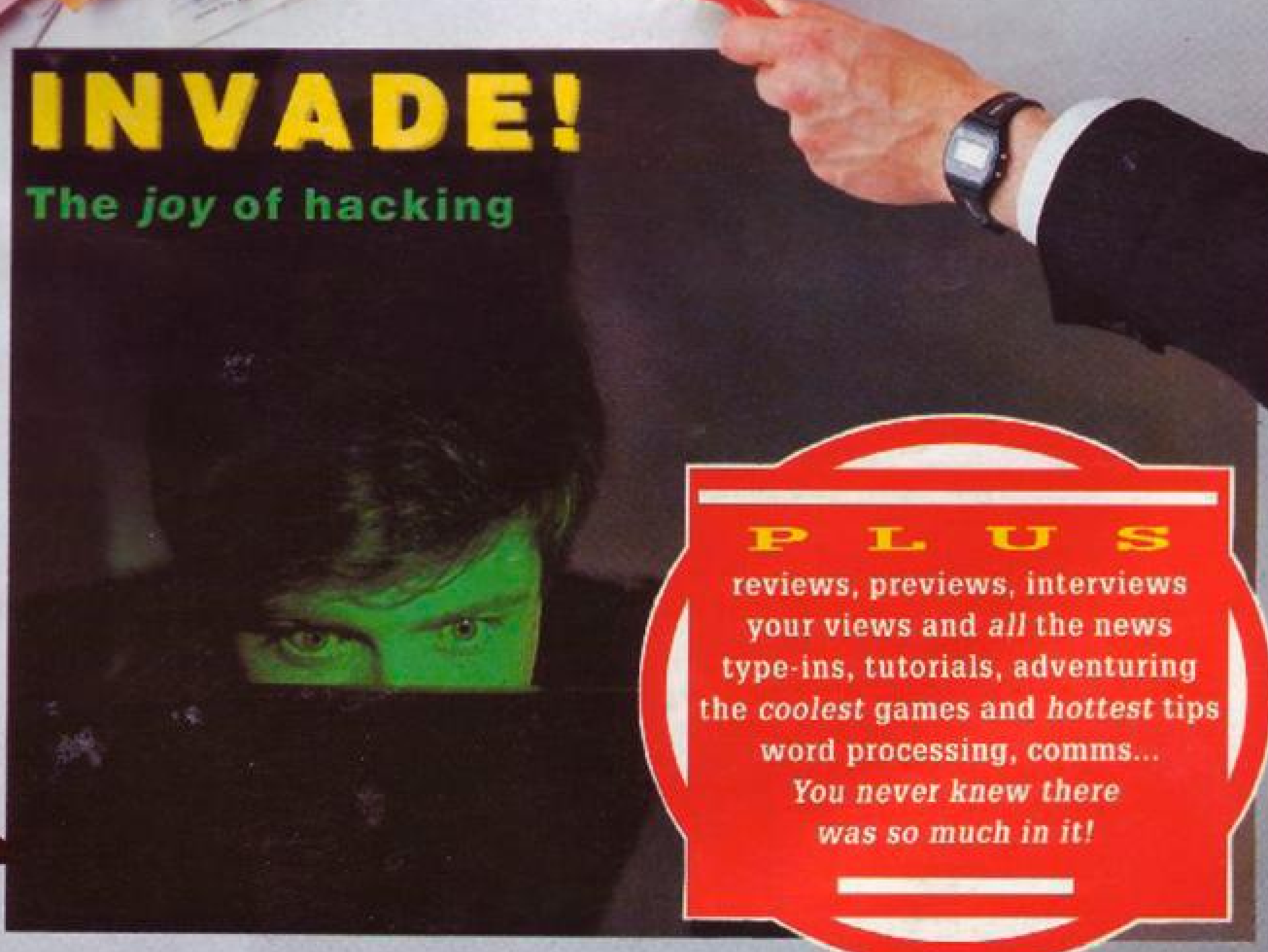


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THE LINE-UP

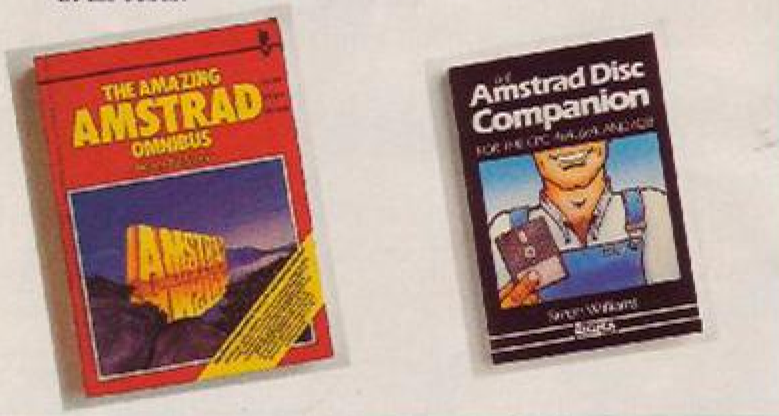
AMSTRAD ACTION • AUGUST 1988

FRONT END

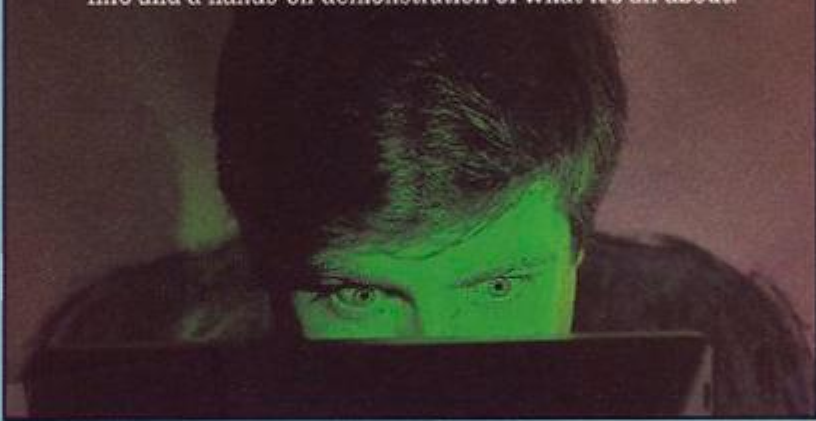
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ACTION & ADVENTURE

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INTERACTION

FOR THE PEOPLE● BY THE PEOPLE

WRAPPING UP

THINGS TO BUY● BYE!

If it ain't broke...

Hello there! It's your new editor, as promised (threatened?) last month by Bob 'something in my eye' Wade. I hope you'll join with me as I wish him all the best for the future, and thank him for sterling service. He's been here right from day one, first of all as 'Software Editor', then as 'Deputy Editor' and finally, for 17 glorious issues, as Editor. It'll be hard following in his footsteps, not only because of his incredibly large and flat feet – you didn't know? Oh Bob I'm so sorry you should have said – but also because of what he has done for *AA*, making it to my mind far and away the liveliest and best presented of the CPC dedicated magazines. That makes it difficult to come in and take over.

So don't expect radical changes in your favourite read. In the old maxim, 'If it ain't broke... don't fix it!' We still aim to bring you the best and frankest games reviews around; we'll still be here providing solutions to your problems, a forum for your opinions and the chance to join in the making of our mag.

On the other hand, a new editor inevitably means some new ideas both on presentation and on content. Some of them you will notice, if you're a regular reader, as you flick through, while others may only gradually become apparent. What I'm relying on, however, is that you the readers – who pay my wages, though you may not like the fact – will be quick to let us know what you think. *AA* has never been the kind of mag that thinks it knows best for its readers: on the contrary it's you who have helped shape it and made it what it is today.

Enough of this idle chatter. Let's get on with it, shall we?

Steve

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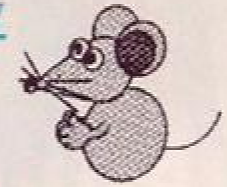
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MicroDesign OPERATES AS FIVE 'PAGES'...

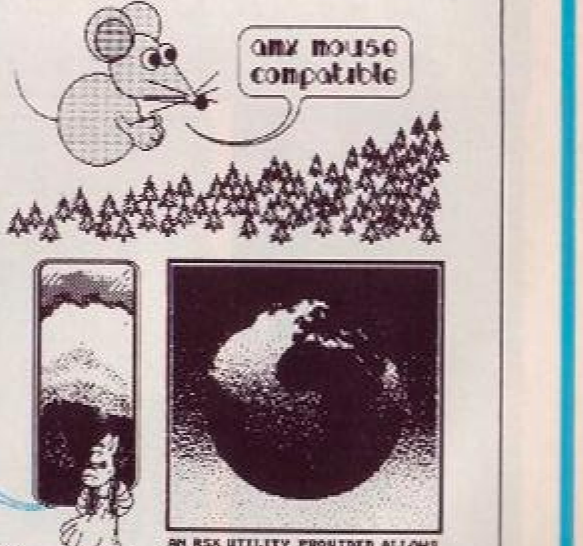
LAYOUT PAGE: AN OVERVIEW OF THE ENTIRE DRAWING AREA
- UPRIGHT A4/SIDEWAYS A4/HI-RES STRIP FORMATS MAY BE USED.
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- LINE, ANGLE, CIRCLE, OVAL, RECTANGLE, TRIANGLE & DIAMOND WITH FULL CONTROL OF OUTLINE AND FILL STYLES
- PATTERNED FILL USING USER-DEFINABLE SHADES/TEXTURES
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- UNDO/REDO
- ZOOM FOR DETAILED PIXEL EDITING

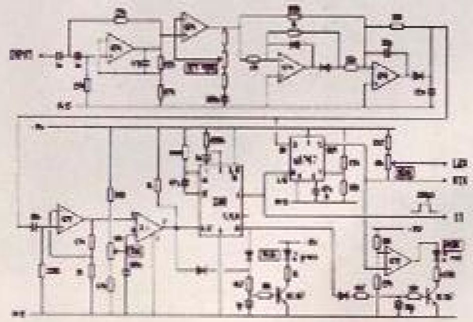
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the page produced entirely using cpc6128, MicroDesign, and a £200 printer

REACTION

Don't just sit there grumbling or laughing about it – tell the world! Address your remarks to: *Reaction, Amstrad Action*, 4 Queen Street, Bath BA1 1EJ.

Public programs?

Are your *Type-ins* and cover cassette programs Public Domain? Can I give my friends a copy of *The Duct?*

Colin Young
Hamilton
New Zealand

No you can't, without the author's permission, because copyright of material printed in a magazine is usually reserved by the author. Just in this one instance we contacted Richard Barclay of Gremlin and secured permission for you to make one copy for your friend, provided no money is exchanged.

As of this month we are asking contributors to Type-Ins *to indicate whether they are donating work to the Public Domain, and we in turn will indicate the fact when the* Type-In *is published.*

Hopeless case

I recently swapped my SUN 4/110 computer for a 6128 with that nice man next door, but I've been having a few problems with it and I wonder if you can help?

How do you copy files from disk to disk? I've tried putting two disks in the slot at the front end but all I get is a loud clunking noise and I have to use a screwdriver to get them out.

The red warning light on top of the keyboard is beginning to worry me – what does it mean?

I typed CAT and got the message "Disc missing" and when I checked I found someone had nicked my copy of *The Dark Side*. How did it know?

P.J.Wally
London

P.S. If I am the softwear winner can I have an anghora jumper, size medium, preferably blue?

Disgruntled reader

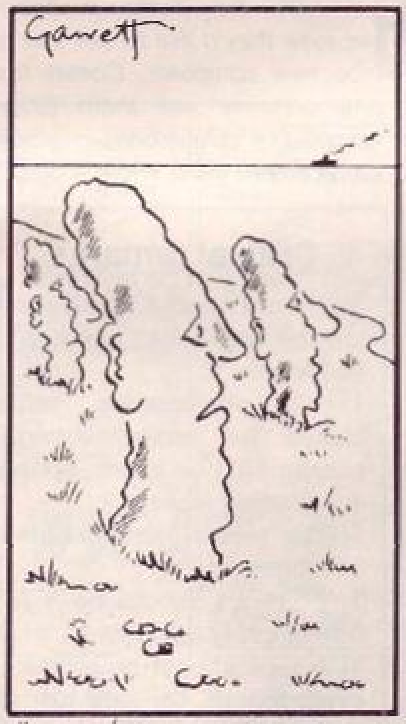
Well, it's finally happened, just as I knew it would. The dedication and the 'pizazz' has gone. No longer do I rush out to Smiths for my latest edition of *AA*.

You started to get bored (or so it seemed) and the editorial quality of *AA*, along with the lacklustre reviews, started its slow but steady slide down the hill of greatness.

If you are going to continue publishing *AA* with its present lack of commitment I would just as soon see its demise before it falls into the pit of obscurity occupied by once great magazines. Remember the *Eagle?*

Simon Warford
London

Well we're sorry to hear you feel AA *is not the mag it once was, Simon, but if it's any consolation you're very much in the minority. We know this not only from our healthy sales and increasing subscriptions but from the comments on our recent questionnaire and at the Amstrad shows we attend. You mention the* Eagle *and, sure, it was a great comic – but perhaps that tinge of nostalgia, which is present throughout your letter, is the answer. Look at some of the early* AA*'s again and you'll realise just how much the presentation has in fact improved. At least, that's how it seems to a new editor, who is convinced that Bob is a hard act to follow.*



"I DON'T SUPPOSE YOU YOUNGSTERS REMEMBER WHEN AA AND BOB WADE STARTED"

Let's hear it for comms

I want to correct some of the inaccuracies contained in Philip Davis' letter (AA 33).

Firstly boards are definitely not 'semi-closed clubs', though many boards do require registration and allow limited access on the first call. Secondly I am surprised Mr Davis found so little help from Sysops, who are all enthusiasts. There are many people, including Sysops, eager to help newcomers, provided they are approached pleasantly. Behave with courtesy and remember you are a guest of someone providing a service at personal cost of time and money.

Thirdly there is no doubt that comms is rather baffling at first, like many areas of computing. As with anything else you pick it up by trial and error. The advantage with comms is that you can ask questions.

Sid Hancock
London

Gruntled customer

A year and a half ago I purchased a Romantic Robot Multiface 2, and although it made back up copies of programs when I first bought it, lately it hasn't been coping with brand new programs quite as successfully.

I was pleased, then, to read in *AA* about the new modified Multiface. Putting biro to paper I wrote off sending my old Multiface 2. A few weeks later my new Multiface Plus 2 arrived: accompanying it were instructions and a very nice letter from Mr Goldscheider, a director of Romantic Robot!

When I attached the Multiface to the back of my computer I found I couldn't get any reaction out of it with the switch up or down. So I phoned them up, only to find that I would need to post it back for them to check it.

I did so and just two days later received a new one with an adjustment – this time no switch protruding out of the box, being built into the device instead. There was also a personal apology for the inconvenience and saying if any more trouble were to occur I was to contact them at once.

My new Multiface Plus 2 works a treat. I congratulate Romantic Robot for the service they have given me and would recommend them to anyone after a friendly, helpful service and the satisfaction that they treat you as an individual instead of just another cheque.

Gareth Elkins
Swindon

Well done Romantic Robot: keep up the good work. Let's hope other suppliers of software and hardware take note and follow suit.

The address for all mail-order enquiries is: Clare Bates, The Old Barn, Brunel Presinct, Somerton, Somerset TA11 7PY, while all subscription matters (except orders – see the back of the magazine) are handled by Avon Direct Mail, PO Box 1, Portishead, Bristol BF20 9EG.

Sprite and early

Yes please! That's in answer to Pat McDonald asking whether anyone would like a sprites/graphics course. I'm sure there must be many of us whose main interest in assembler is for the production of graphics, so such a course would follow on very nicely from First Bytes.

As for what level it should be at, I can only speak for myself. I have some knowledge of assembler but no experience: Assembler listings with commentary would be the most helpful form.

Perry Williams
Cambridge

We have good news for you, Perry, and all the other assembler enthusiasts out there. Pat's hard at work on a series that starts a little later this year just as soon as we can find a regular spot for it. Don't expect huge chunks of assembler, though, because we want the programs to be user friendly for the beginner. Hackers can of course delve in for themselves.



"WILLIAM REES-MOGG WILL HAVE SOMETHING TO SAY ABOUT THAT GAME . . . "



" IT'S LIFE JIM - BUT NOT AS WE KNOW IT . . . "

CPC, speak to me

Sudden blindness has halted computer entertainment for my nearly four year-old son. I am assured keyboard skills will be essential to him. Do you know of any CPC adaptations for the blind? If I were to buy a speech synthesiser are there any programs existing such as a talking calculator or talking games?

Stephen Braithwaite
Scunthorpe

Good grief, four years old! They start them young in Scunthorpe. As you may already be aware most work for blind would-be computer users has been done on the BBC and the PC. We spoke to Mike Cassidy, who is heavily involved with computing projects for the visually handicapped, and he believes that there are no talking programs for the CPC. If anyone knows different perhaps they could let us know and we'll tell the world.

By the way Speech! – the all-software speech synthesiser we reviewed back in AA15 – is still available. It costs £9.95 (tape)/ £14.95 (disk) from Superior Software ☎ (0532) 459453.

Not strictly true

I have a 464, but no monitor. Computer shops tell me they can't possibly supply the monitor on its own, and if I want one I have to buy another computer!

Masoud Dlavari
Torquay

They're being, ahem, economical with the truth, probably because they'd like to sell you a nice new computer. Comet for one certainly sell them (they have 1,119 colour ones in stock today, if you must know!). Stock codes are 8802391 (colour, £160) and 8802309 (black and white, £60).

A quick plug

In response to J.R.Hawkins' letter (*AA* 33), for £8.95 I supply a lead that plugs in between the expansion port and your ROM board with a switch to switch the ROM's on and off.

I am working on putting an extra ROM socket onto the Amstrad RS232. Please phone me if you're interested.

David McKeever
Mauchline
Ayrshire
(0292) 541 283

Chip shock

For my Computer Studies GCSE project I am writing a computer program in Pascal, and I want to place a pascal chip in my computer (6128, disk). I have searched high and low for a dealer who can supply one, but with no success. Are there any other ways I can get my computer to write in Pascal?

Miss Andri Pavlov
Ilford

Why Pascal on a chip? We reckon a disk version would be much cheaper – Hisoft, for example, supply Pascal 80 for £49.95. ☎ 0525 718181.

Sounds easy

How do I get stereo on the 6128?

Dominic Corby
Chelmsford

You need an amplifier such as the Sound Blaster from Siren Software, which costs £29.95 and also features two loudspeakers. Alternatively you could ask an electronics technical chap to whip up such a system.

Critical remarks

My friends and I think these are the bad points about your magazine:

1) A presentation rating should be added, covering packaging, title music, options and loading screen.

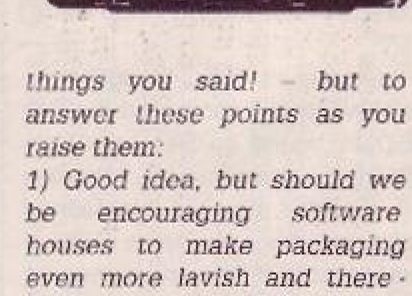
2) The second opinion should be longer.

3) Previews should be a feature of every issue.

4) A tape should be produced every month. I'm sure like me many readers would be willing to pay an extra twenty-five to fifty pence every month.

5) Add some humour. Some people did read the comments at the bottom of the pages!

Simon Harris
Maidenhead



We've had to cut your long letter – especially all the nice things you said! – but to answer these points as you raise them:

1) Good idea, but should we be encouraging software houses to make packaging even more lavish and therefore more expensive?

2) Gary usually says it all anyway! (Well, I think so.)

3) The trouble with previews is that what is promised for next month may or may not arrive before Christmas, and it's in no-one's interest – especially yours – for us to raise hopes that aren't met.

4) If only we could produce a tape every month! Unfortunately it's very expensive, and if it doesn't boost our already massive readership yet further we don't recoup our costs. Still, we're hoping to do one very soon.

5) Not everyone shares the same sense of humour, and what you and I find funny might well put other readers right off.

For instance, I'd love to see the return of page bottoms and Toot... write to BRING BACK TOOT at our usual address and let's see if he'll consider a comeback. He's a reclusive superstar millionaire jetsetter playboy now, you know!

Antipodean corner part one...

New Zealand is great except for one thing. The other day I was reading the latest *AA* when I decided to splash out and subscribe, because I would save a lot of money and also get a free game.

Off I went to the post office to get some postal orders, but they didn't have them anymore because they were too costly. She suggested I go to a trading bank and get a bank draft. And that would cost $10 -$15 extra!

On the AA order form you list Access as a method of payment. A number of banking institutions here have Access Cards. So I was wondering if we could use these cards to obtain purchases from you?

Or can you suggest a better method of payment? Can we find the current exchange rate and write out a cheque for that amount? Would you accept it? Please help me and all the other people around the world who would surely subscribe if they knew how to make the transactions.

Danny Gilgren
New Zealand

The situation for overseas subscriptions varies from country to country. I'm very surprised that a banker's draft should cost as much as you say – I suggest you ask in one to find out the truth. A better way of paying is to go into your local bank and ask them to send the money. They take the payment from you and send it over here using their credit card number. The current rate for an NZ subscription to AA is £30.18.

Please note, everyone, that the address for subscription inquiries is **The Old Barn, Brunel Presinct, Somerton, Somerset TA11 7PY**: *don't send them here, because we just cannot help you! And for changes of address write to* **Avon Direct Mail, PO Box 1, Portishead, Bristol BF20 9EG.**

...and part two

I live in Dunedin, possibly one of the farthest cities in the world from England, and there's very little software around down here. The two shops retailing Amstrad software have between them about 150 titles – about 50/50 tape/disk – but they can never get any of the games I see in magazines like *Tau Ceti*, *Aliens in Las Vegas* or *Attack of the Killer Tomatoes*.

The other problem is the price. An average tape game is $45 (approximately £15) and disks about $60 (approx £20), and these are also the prices for so called budget games: *Saracen*, for example, costs £2.99 in England and £15 in New Zealand. I discovered the mail order software in the back of some Amstrad magazines - but it's available only if accompanied by a £36 subscription or £5 if overseas! My pocket money doesn't stretch that far.

My second grizzle is that my little brother sometimes makes daring raids into may room and into everything. Recently he corrupted my best disk, *Five Star Games 3*. Silly me, I hadn't made a back-up copy because none of my disks copy using CPM (except *Fu-Kung in Las Vegas* - but and who would want a back up of that?). Are there any programs which can copy at least some disks? My final grizzle - the death of my *5 Star games III*. Is there a way to clean the shutter on which my brother left his finger prints? I feel I am stuck in a rut which I can't get out of.

Aaron Watson
New Zealand

Now, all you British readers, do you appreciate how lucky you are, not living in Dunedin and having Aaron Watson's younger brother living in your house?

Discology from Siren Software, £14.95 in Britain, not only copies 95% of disk software, but is easy to use. Recovery of corrupted disks is tricky, however, and your best hope is to try and exchange it for a working disk, either with the person from whom you bought it or the manufacturers.



Cartoon by S. Sarkar

Amstrad Show 'Disappointment'

AMSTRAD COMPUTER SHOW

Exhibitors at the latest Amstrad show, held at Alexandra Palace in London, pronounced the event a 'flop'. The absence of buzz, so much a feature of previous shows, was the topic of much conversation both among exhibitors and among visitors.

Mark Tilley of **Arnor** agreed that the show was 'much less successful than any previous one', and professed himself 'very disappointed at turnout and sales'. **Joy Sharp** of **Rombo** described it as 'average', and felt that it 'didn't come up to expectations'.

Alexander Goldschreider of **Rom-antic Robot** has become increasingly doubtful about appearing at Amstrad shows and 'won't be there next time'. He spoke to lots of people, he said, 'including Amstrad, and not one was happy'. His impression was that either the organisers had been 'very unlucky, or the show was not been professionally done'.

Excellent venue

The venue itself was excellent. Veterans no doubt recall the old style of computer shows, when aisles were six feet wide and a popular stand caused jams of M25 proportions. This time there was plenty of space for all – so much so, in fact, that the party never really got going.

One cause of the lack of excitement was the shortage of new products. *AA* did track down two offerings: *The Insider*, a dis-assembler to list software in assembly language form for *Multiface* owners. – **Romantic Robot** are busy on it and we hope to review it next issue – and second, **KDS** were assessing interest in aone megabyte silicon disk with a price of about £250. 'We realise it's really of minority interest', they told us, 'we're just seeing how big a minority'.

Attendance, at about 12,000, was fewer than the 20,000 expected. **Mike Mallone**, sales manager of **Database Exhibitions** who run the show, admits he was 'disappointed'. 'Exhibitors turned out in respectable numbers – about 90-100 I believe'. But the show was dogged by three main problems: 'Number one, we held it on a bank holiday week. That was a gamble that didn't pay off, because the two previous Bank Holidays had had fine weather. We won't try that again!

'Second, it was a bit too close to the previous show. The problem here was that Alexandra Palace wasn't finished on time, so that the previous show was late.

'Last, there were very few new product launches. We couldn't find any to advertise with the show, to draw people.

'But let's put things into perspective. If you compare this summer show with last year's, it was identical as far as attendance is concerned.

Good time had by *AA*

'We realise that 'you're only as good as your last show''. We feel very sorry for the exhibitors – we don't like to see them not maximising profits''.

Database's plans for an October show in Manchester have not been hit.

Future Publishing, which boasts *AA* among its titles, was there in strength, selling back issues, heaps of subscriptions, cutprice software and even outrageous helium-filled balloons, as well as offering genuine *AA* advice.

The team – **Pat** on Thursday, **Gary** on Friday and new boy **Steve** on Saturday – had themselves a great time, and extend a warm thanks to all those who came up and chatted – and especially the many people who said such nice things about the magazine!

464 Upgrade

Interested in upgrading your 464 into a 6128 using a RAM pack and 6128 ROM (see *AA*30)? K&M Computers can do you the 6128 ROM at £16.50, a big saving on the list price of £21.75.

K&M will do the conversion for you for just £25 including the ROM, or for £12 if send them your 464 with the ROM chip.

K&M are on ☎ 0695 29046, or write to: K&M Computers, 40 Fairstead, Birch Green, Skelmersdale, Lancs.

Free music

Goldmark have combined with Rob Baxter to arrange a special deal for purchasers of the *Advanced Music System*. Buy it from them at £26 and you receive a free disk of previously unreleased music files. ☎ 07072 712529.

Love is a MUG's game!

Addicts of multi-user games have been issued with a warning that such activities can be highly dangerous.

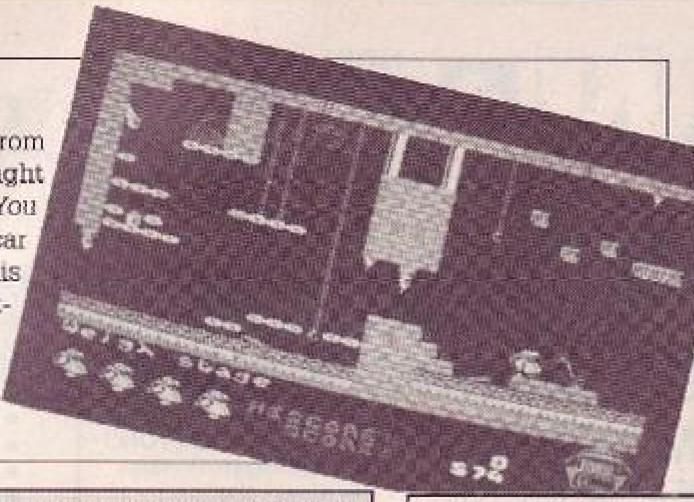
Melanie Weaver and Jez Thorpe met through the multi-user game *Shades* and four weeks after their game characters married they got engaged in real life. Since then they have married and all the signs are that they'll live happily ever after.

'Zis is a classic case of multi-user empathy', commented *AA* Doctor: 'zese two unfortunate people have quite obviously got carried away. Perhaps ozzer people can learn from zis'.

Shades has until now only been available through a subscription to Micronet and Prestel. Now anyone with an RS232 interface and a modem capable of working at 1200/75 baud can take part in it. *Shades* is on ☎ 0898 10 0890 and costs 25p per minute off peak and 38p per minute peak.

But don't say you weren't warned!

Parking mad



Chubby Gristle is a new game from Grandslam, the team that brought you *Terramex* and *Flintstones*. You play the eponymous *Chubby*, a car park attendant who has to eat his way through 21 screens of platforms that increase in difficulty. Due for release in August at £8.95 cassette and £14.95 disk.

Boxing news

SBS have a free catalogue of supplies from disk head cleaners and dust covers to printer paper and screen filters. For instance: two disk boxes, one lockable, holding 25 uncased disks (15 cased) and costng £18.20; the other holding 50 uncased (30 cased) at £10.95. ☎ 0273 726331.

Printer price hike

The European community has slapped a levy of a third on all Japanese printers coming into the EC. The enforced increase is bound to hit sales.

Brother, who manufacture printers and components in Britain and proud of it, can perhaps be forgiven for gloating somewhat over the news, having planned as far back as 1984 to manufacture in the UK. Since October of last year they have been producing a full range of dot matrix printers from their factory in Ruabon, North Wales. 'Brother's foresight has been rewarded', boasts John Carter, head of Brother's Office Equipment Division.

Not so happy are Epson, who have been forced into announcing across the range price increases – though these have been kept to an average of about 10%. 'This levy will hurt Epson', admits Jenny Lynn-Jones, Printer Business Manager: 'it will hurt our profitability. It will hurt our investment in the UK'. Epson's press release on the subject makes interesting reading, as they try desperately to deny what everyone knows: that printers, like all computer peripherals, are highly price-sensitive.

'In the experience of the 100 UK Dealers interviewed by Romtec in 1987', Jenny Lynn-Jones claims, 'when a customer chooses a printer price comes a distant fifth behind performance, reliability, service and range'. Yes of course...

Dragons and Heroes

The long and eagerly awaited computer versions of Advanced Dungeons and Dragons (AD&D) are due to arrive in September. The first release is *Heroes of the Lance*, an arcade action type game by US Gold in which you control a party of eight adventurers. Strategic Simulations Incorporated (SSI) were to do the programming of *Pool of Radiance* which was to be the first of the true role playing style games, but it now looks almost certain that it's not going to arrive on CPC (for the full story see *Previews* on page 42). There are other products planned in the next four years (the license deal lasts until 1992) including a war-game and a training city called *Hillsfar*.



It is hoped*Hillsfar* will make it onto the CPC, but that's still a long way away.

Budget Releases

Players have just released two more games: *Star Trooper* and *Sword Slayer*. The former is an exploration/shoot-em-up set in the secret HQ of Jabba McGut, and the latter a simple combat game for one or two players. The action takes place in a gladiatorial arena, with death the prize for the loser. Both cost **£1.99 on cassette** only.

Beach Head by **Americana** is a re-release of a former full-priced game. You control a force that has to attack and destroy a fortress deep inside enemy territory. The game is split into several stages that require different skills to complete. It costs **£1.99 on tape.**

Zeppelin Games now come in two varieties which are indicated by the colour of their covers. Red covers are games developed by Zeppelins in-house programming team and they are **£2.99.** Blue covers are either re-releases of old games or products developed outside Zeppelin and cost **£1.99.** *Frontline* is a red game in which you get to blast hordes of enemy troops with machine gun fire and grenades. *Codename Mat*, in the blue range, is a solid 3D shoot-em-up with a large portion of strategy in it as you hurtle around the solar system blasting the invading Myons.

Airwolf is the second game to arrive on **Elite's** budget label, **Encore.** You play the part of Stringfellow Hawke on a mission to rescue five US scientists that are held hostage deep beneath the Arizona desert. **£1.99 on cassette.**

The latest game to appear on the **Ricochet** label is the old **Lucasfilm** game, *Ballblazer*. You sit in the seat of rotofoil and chase a ball around a large 3D playing area trying to score goals. Your opponent can either be another player or the computer which has various skill levels. **£2.99** for the tape.

There are three new releases in the **Silverbird** range: *Stunt Bike Simulator*, *European 5-a-side* and *Ninja Scooter Simulator*. In *Stunt Bike Simulator* you have five different tasks to complete while riding your motorbike. *European 5-a-side* is a two player game of football, viewed from above the pitch and *Ninja Scooter Simulator* is similar to the many skateboarding games on the market. All three cost **£1.99 on tape.**



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Words Work

Get the most out of your word-processor and printer. This month: all you ever wanted to know about letterheads but were afraid to ask.

So you want to create your own letterhead, do you? Just as well you're reading *AA* and not the *Pigeon Fancier's Weekly* (they do a rotten letterhead, I'm told). A personalised letterhead, after all, provides the perfect excuse for a real ego trip. I get depressed by stack after stack of indistinguishable printed letters. I daresay many others would love to see personalised touches in correspondence as machine printing (word-processing!) becomes more and more common. Remember symbols are much more memorable than words or numbers.

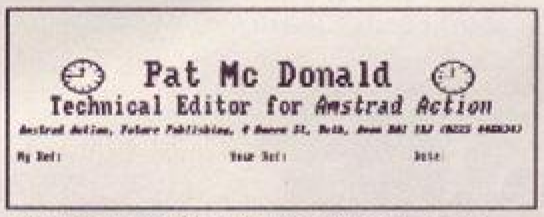
Right then, step one: take pen and paper and start doodling to find a good looking design. Certain features – notably your name and address – are obviously essential. If you are in business your telephone, fax numbers and date space should also be included, with ancillary information about VAT, reference and company registration numbers if applicable.

Producing graphics on the Amstrad is not particularly difficult with one of the many art programs around, but using just the machine can be tricky. This entails slowly building up a Basic program which uses the commands **PLOT**, **DRAW** and **MOVE**.

During the past year there have been various *Type-Ins* that might be of use. Probably the best is Robert Buckley's *SmART*, back in *AA*29. Considering its size, just under two pages, it is very impressive indeed.

Once you have your letterhead looking good onscreen you need to get it out to the printer. And this is where the problems start. Such screen dumps are fairly common – there is one in this issue. However sometimes they print down the page – it varies from program to program – and some only work with certain graphic modes. Problems, problems.

The best thing is to use a commercial art package. There are several about, though for some reason software houses been slow in developing new ones. With such a product drawing a letterhead is simplified, and generally they also include screen dumping routines to printers. This is dependent on your printer type: most only work with an Epson compatible.



My letterhead. ***(Don't pretend you're organised, McDonald, no-one will believe you –ed.)***

Another problem printers have concerns the seven bit printer port built into all Amstrads. This means that, unless the screen dump is sophisticated enough to deal with the problem, graphics dumps have lines running through them. As well as this you have to face the fact that your letterhead is going to be in black and white – unless of course you have access to a colour printer or plotter (such as the Star LC-10, which costs about £240). At present there are no screen dumps that use the extra colours.

Once you have your design – whether by drawing the letterhead yourself and running a *Type-In* screen dump, using an art program, or perhaps a combination – you are faced with reproducing it on your stationery.

Probably the easiest way is to take your design down to your local printer – as in the person who prints, rather than machinery etc. *(get on with it -ed.)*. They are only too willing to whip up some masters and produce sheets by the thousand – because they charge for the privilege.

Alternatively you could photocopy it. This means poor quality, and lots of expense, but a low hassle rating.

The cheapest way of all, not surprisingly, is to print it yourself, using your own printer and simply running off copies as required. It's noisy and time-consuming, but at least it's cheap and convenient.

Portraits of the artists

Top of the range of art packages comes AMX *Stop Press*, a desktop publishing package in its own right. This means it can be used to write finished pages rather than just text. It lacks a few art features though. Next would come *Micro Design* from Siren Software, also a DTP program. Far cheaper than *Stop Press* with more art options but less publishing power. For an out and out art package it's hard to beat the *Advanced Art Studio* (see *AA*21) from Rainbird. By far and away the most powerful you can get.

One minor point is that all of these work only on 128K RAM machines with disk drives. The only 464 tape art package worth talking about, *Melbourne Draw* from Melbourne House, has sunk into obscurity with the buy-out of the company by Mastertronic.

Contacts

AMX Stop Press ● £49.95 ● AMS ☎ 0925 413501
Micro Design ● £24.95 ● Siren Software, ☎ 061 228 1831
Advanced Art Studio ● £24.95 ● Rainbird, ☎ 01 240 8838

Past, present, future

When the Amstrad was first launched Amsword *was available straight away. It was in fact a conversion of the* Tasword *word-processor. Further versions were released by Tasman software.*

Coming fairly close together were WordStar, Brunword *and* Protext. *Of these, the first has sunk into obscurity, while the others have grown and been further developed.*

Other word-processors, such as Pyraword, Pendown *and* NewWord, *have gained a niche. Generally though, three of the first four have been going strong. Their support now includes spell checkers and (in two cases) miniature filing systems. But what next? Has the CPC's word-processing capacity been reached?*

I doubt it. For a start, the ROM software capacity of the machines enable extra programs to be plugged in without losing memory. Virtually no other machines in the price range have that capability. And there are plenty more features to include such as a thesaurus, integral spreadsheet and print enhancers, for instance. But more than that, the continued interest in this column indicates the large user base that still exists.

So don't get off yet – the best is yet to come!

Get it right

I fondly hoped the key buffer expansion program on page 21 of *AA*31 would solve my problems. Unfortunately it didn't. It reset my CPC – not exactly what I wanted!

After flipping through various books – including the *CPC Firmware Guide* – I discovered a mistake in line 3Ø. The line should read (I think!)

```
3Ø DATA 21,ØØ,Ø5,11,ØØ,AØ,CD,15,BB,C9
```

Hugh Rabson, Bognor Regis

Pocket Solution

A tip for *Pocket Protext*. If you have a CPC6128 and a DMP2ØØØ printer then, when you press the CTRL or SHIFT keys as well as a numeric (keypad) key, a 'special' character is printed on the screen, but not on the printer. There are two solutions:

1) Load SETPRINT and load the PCW.PTR within the program. Change the printer type from internal to parallel. Delete the codes for continuous paper and single sheet. Save this edited printer driver as DMP2ØØØ.PTR on the start of day side of the disk. Now all is as in the manual.
2) Another method is to use the phrase key, CTRL Ø. Go into the command mode and type LP then press RETURN. Now all the phrases are displayed on the screen. Note that all the special characters are available from there. So if you make a printout of which characters are where, you can get them with the CTRL Ø key. The only disadvantage is that you cannot create phrase files without destroying any of the characters.

John W Bouman, The Netherlands

Collected works

Some *Tasword* tricks. If you print £ 1ØØ or 99 % in your text and then justify, the single space often becomes 2 or 3: ridiculous. Sometimes the symbol jumps to the next line: intolerable!

My solution is to set up one of the function keys to print a non-printing character from the second character set, say the Greek capital sigma, Σ. Insert this into the single space which you want to retain. The memory then regards the combined characters as one word, but the printer leaves a single space! Or you can program all the appropriate keys like £, $, and % to be automatically linked with the sigma.

There are many printer characteristics not explained in the manuals. For instance, if anyone wants to know how to get all French accented letters onto the numeric keypad, to print them both to the screen and the printer – I can send them the information. It was quite by chance that I discovered that most of these characters are directly available in the DMP2ØØØ.

I can print all these accented letters in language 2 (English) except the umlaut and cedilla. They are in the printer somewhere, but I want to use them without switching to language 3 (French) and losing some of the English characters.

Granting the option

I use *Amsword* (version 1.Ø2) on disk. I often find that when I come to load a file I have forgotten its name. Up to now this has meant going into Basic to catalogue the disk or taking pot luck. The solution I went for was to change lines 29Ø and 39Ø as follows:

```
29Ø IF a=8 THEN MEMORY
   mh:CAT:PRINT "Press any key to
   continue":WHILE
   INKEY$="":WEND:GOTO 2ØØ
39Ø a$(8)="File
   catalogue":b$(8)="F":b(8)=53
```

This replaces the option to go into Basic with an option to catalogue the contents of the current disk.

Martin Bolter, Northants

In the DMP2ØØØ manual it gives an example program for 'User Defined Characters'. But it only prints characters using the seven bottom pins out of the nine on the printer head. I cannot find out how to use the top seven.

As with all the instructions in the Amstrad manuals, it took me hours to translate the instructions on User Defined Characters into normal English. The people that design these things are practically illiterate when it comes to explanations in ordinary language!

R A Hannon, 2881 Route de Mende, 34Ø9Ø Montpellier, France

***Peter Tewkesbury** can supply an editor for the second character set of* Tasword. *His address is 26 Garthorp Rd, Northern Moor, Manchester M23 0AS. Send him a disk plus £1 to cover costs.*

Your seven bit problems are endemic to the hardware of the Amstrad. How about an eight bit printer port from KDS electronics at £19.95, which lets you print taller characters? ☎ 04853 2076.

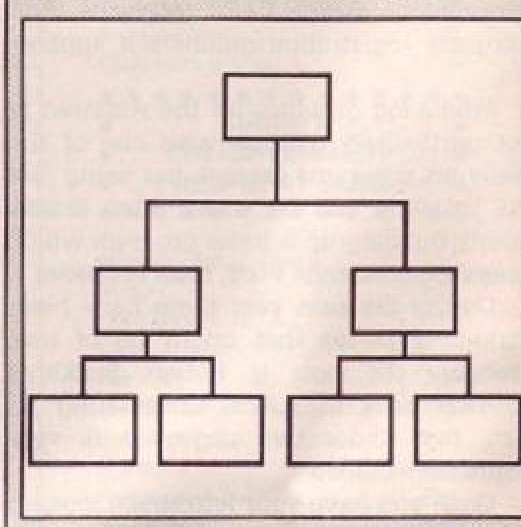
Qualitas Plus, *a very attractive program from Seven Stars software, enables the creation of extra fonts very easily, and can utilise an eight bit printer port if you have one. As a simple answer to download problems it is the one I heartily recommend. It works on* Masterfile III, Mini Office II *(6128 only),* Protext *(not CPM) as well as* Tasword. *Price is £14.95 disk, £12.95 464 tape version. Extra font disks are available for £9.95 each. Seven Stars can be contacted on ☎ 06284 3445.*

Boxing *Brunword*

A valuable feature of the current version is the ability to redefine certain keys to send any sequence of ten characters to the printer and to display any desired symbol on the screen. There are 21 keys that can be redefined: the numerals 0 to 9, prefixed by CTRL, and various non-alphabet keys. These last are the keys that produce the accented characters if a foreign alphabet is being printed, so that it is possible to display the accented characters on the screen as well as print them. It is also possible to instruct the printer to print a character high speed, double density dot graphics so that it is possible for instance to define keys to display and print in Welsh and Cyrillic.

When loaded *Brunword* defines the numerals with CTRL to display and print a selection of Greek characters and mathematical symbols. The others are left unchanged. The keys can be redefined using a Basic program and the set saved to disk. The set is then loaded with ESC U (update).

I use this facility to produce tables and family trees, using the 'box' characters of the IBM set. By loading the appropriate character definitions I can assemble on the screen and then print patterns such as the following:



With another set of definitions I can use the number keys to produce captions. With a single key stroke I can print in double height, double width, emphasised italic or double height, double width, reverse print, and display a suitable symbol on the screen.

If anyone wants more information on this or any other aspect of *Brunword*, drop me a line and I'll gladly help.

M Catton, 11 Battery Close, Gosport PO12 4PA

Share word processing tricks or problems with other Amstrad addicts. Send them to: *Words Work*, *Amstrad Action*, Future Publishing, 4 Queen St, Bath, BA1 1EJ.

ROMANTIC ROBOT *present*

1988 - THE YEAR OF THE ROBOT



Q: WELL, I'VE HEARD OF THE YEARS OF THE CAT, PIG, AND EVEN DRAGON - BUT THE YEAR OF THE ROBOT?

A: Absolutely! And ROMANTIC ROBOT wish to make 1988 a truly memorable year (if not us, who will?). To kick off with, there is an INTRODUCTORY OFFER OF **£29.88** ON RODOS, plus a truly unique 1988 SPRING MAIL ORDER PRICE OF MULTIFACE TWO - **£42.88**

Q: I LOVE SALES. BUT WHAT'S SO LIKEABLE ABOUT RODOS and MULTIFACE?

A: RODOS is too powerful and complex to be summed up here - please send a SAE for full info. MULTIFACE is (simply) a MUST for ANY CPC owner: it can copy and change programs as you wish.



Q: OH, DO I NEED TO DO ANY PROGRAMMING TO MAKE BACK-UPS?

A: NO! - NOT with the MULTIFACE TWO - it is in fact the ONLY product on the market which works FULLY AUTOMATICALLY. You LOAD any program as usual. RUN it for as long as you like and when you wish to make a copy you just press the MULTIFACE's red button and follow the menu and on-screen instructions.

Q: HOW DOES IT WORK THEN? IS IT EASY? USER-FRIENDLY? ERROR-TRAPPED? IDIOT PROOF? GUARANTEED?

A: YES! It works a treat and it could not be easier. The menu gives four basic options - to **SAVE** a program, to **RETURN** to continue it, to **JUMP** (say to your own routines - invaluable for hackers) and **TOOL** to access the MULTI TOOLKIT set of built-in utilities. For example pressing **S** to **SAVE** will first allow you to **NAME** the back-up and then let you save a **PROGRAM** or just a **SCREEN** to **TAPE** or **DISK**. Before the saving itself, MULTIFACE compresses the program so that it takes the least amount of space on tape/disk and will re-load as quickly as possible. Once a program is saved, you can **RETURN** or **JUMP**, use the **TOOLKIT** to change it. **SAVE** it again, etc.

Q: DON'T YOU CORRUPT THE SCREEN WITH YOUR MENU, INSTRUCTIONS, PULL DOWN WINDOWS, ETC.?

A: NO. MULTIFACE TWO has its own memory (8K ROM & 8K RAM) and a lot more hardware - thus when it finishes its job or when you re-load your back-ups, everything is **FULLY** and **AUTOMATICALLY** restored: screen modes, colours, windows, etc. This is essential and NO OTHER DEVICE CAN DO IT!

Q: OK, SO MULTIFACE CAN COPY FROM* TAPE TO DISC*. BUT CAN IT DO* TAPE TO TAPE *OR* DISC TO DISC *OR* DISC TO TAPE*?

A: Of course it can. MULTIFACE saves either to tape or disc and it saves whatever happens to be in the computer at that time - no matter how you loaded it in.

Q: SO FAR SO GOOD. BUT CAN'T I DO ALL THIS WITHOUT THE MULTIFACE?

A: ABSOLUTELY NOT! First, you need a hardware device, a "magic box", to be able to stop and copy programs AT ANY STAGE - be it upon loading, half-way through the game, etc. Tape/disc copiers can only try to copy programs BEFORE they load: if there are unorthodox loaders, speedlocks, protections against copying, etc., you'll end up with a problem - but not with a back-up. Also, with MULTIFACE you can poke infinite lives, ammunition, etc. - and then SAVE.

Q: MULTIFACE IS NOT THE ONLY 'MAGIC BOX' ON THE MARKET - WHY SHOULD I BUY IT MORE THAN ANYTHING ELSE?

A: There are four devices on the market. Action Replay by Datel Electronics, Disc Wizard by Evesham Micros, Mirage Imager and MULTIFACE TWO. Each manufacturer would naturally argue his product is the best buy - fortunately (for you and us), MICRONET recently compared all four units and MULTIFACE TWO came out the best in literally all respects: the most successful one - 100%!, the ONLY AUTOMATIC ONE, the FASTEST ONE both in LOADING *AND* SAVING time, the one taking the LEAST ROOM when saving - and you still get a couple of EXTRAS: a RESET button and an extensive and unique MULTI-TOOLKIT.

Q: MULTIFACE IS IT! THE RIGHT THING IN THE RIGHT TIME! IF ONLY IT PAID FOR ITSELF...

A: But it does! By the time you buy 8 programs on tape instead of disc, you will have saved £40 - the cost of the MULTIFACE. The money you save on further programs is all yours

.... **MULTIFACE — worth every penny, saves you pounds!**

Romantic RObot Disc Operating System

Just one ROM will turn your CPC into a professional set-up: With RODOS you can attach additional disc drives - 40/80 track, single/double sided and store more than 800k per disc.

RODOS **NEW**

But RODOS is in fact much more than a fast and perfect DOS. RODOS also gives you RANDOM ACCESS, PRINTER BUFFER, full ROM manager, SILICON DISC, altogether 54 new bar commands, enormous power - all this and much more for £29.88 only!

multiface two

SPRING MAIL ORDER SALE PRICE £ 42.88

RODOS

INTRODUCTORY OFFER-ON ROM £ 29·88

The special price of £42.88 applies strictly to mail orders received with coupon below before 31 July 1988

Tape-to-disk at the touch of a button. Ridiculous, you may say, but it works every time. *Multiface* can stop any program in its tracks and save the program from memory to either tape or disk. It's completely fool-proof. Similar products have had problems with screen size, colour and even sound; *Multiface* can handle all these without a second thought.

That alone would have satisfied many people, but Romantic Robot has gone one step further, incorporating a memory editor. No program is safe with this: everything is out in the open, including the Z80 registers, CRTC data and any part of memory.

Don't be fooled into thinking this will result in mass piracy, however. The *Multiface* unit itself must be plugged into your Amstrad to allow reloading of a program it saved.

Multiface II must be the cleverest hardware device at present - a necessity for disk owners who thought they were stuck with loading from tape every time.

AMSTRAD ACTION JANUARY 1987

THE YEAR OF THE ROBOT - BE PART OF IT

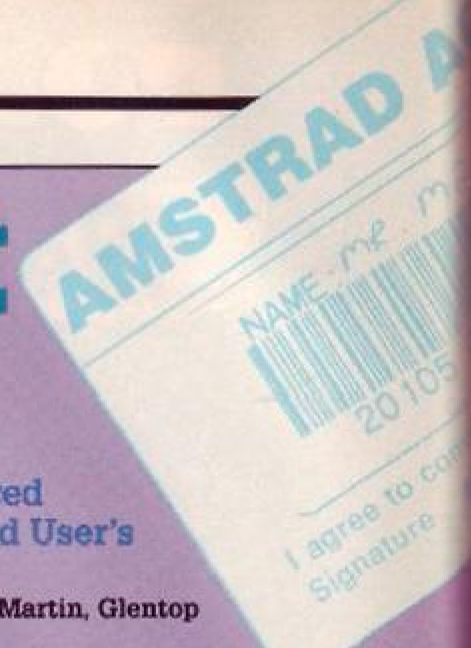
I order MULTIFACE 2 (£42.88)☐/ RODOS (£29.88)☐ plus p&p UK £1, Europe £2, Overseas £3

I enclose a cheque PO for £........... or debit my No ____________ Card exp..........

Name & address ....

ROMANTIC ROBOT UK LTD 54 Deanscruft Ave, London NW9 8EN ☎ 24 hrs 01-200 8870 AA

Just the ticket



Read all about it – Pat McDonald recommends reading material to educate and entertain.



Powerful Programming for Amstrads – Supercharge your 464/664/6128

by W. Johnson, Sigma Press
ISBN 1 85058 046 4, £6.95

This compilation of Basic routines covers many interesting and varied topics, from sorting routines to 3D image manipulation. It is a pity, however, that large, sophisticated programs get no more than a paragraph or two of commentary and explanation.

Johnson deliberately makes it difficult to understand a program without going through it and analysing it. In some ways this represents a challenge, and some of the more obscure routines need a good grounding in mathematics to appreciate them. A book to read if you want to find some programming solutions, but not for a tyro wishing to cut some teeth.

Further reading:
The Amazing Amstrad Omnibus
Martin Fairbanks, Interface Publications, ISBN 0 907563 82 1, £7.95

Music and Sound on your Amstrad

by Ian Sinclair, Melbourne House
ISBN 0 86161 192 6, £7.95

Sinclair, writing in his usual chatty style, concentrates solely on the sound capabilities of the CPC's. He starts with sound propagation and progresses into musical theory. The examples and diagrams are clear and informative, and while the plentiful demonstration programs may be short they are of high quality.

Coverage is not too deep, yet many substantial noises and musical compositions can be appreciated and adjusted. There's a section for machine code users, too. Readable and informative.

An introduction to CPM+ on Amstrad Computers

by P.K. McBride, Glentop Publishers Ltd
ISBN 1 85181 054 4, £7.95

There is not a lot of literature available for the novice on CPM+, a situation happily improved by McBride's introduction to this operating system. CPM books are more common, but in very few other instances can reference be found to the extra facilities available on CPM+.

As well as detailing the usage of the system, the book gives information on the usage and purpose of the more commonly used CPM+ programs. To many people the book may seem a little too advanced, but it is the best attempt at a tricky subject. GSX, BIOS and BDOS are briefly considered as well.

Further reading:
CPM Plus Handbook
by Digital Research Inc and Amstrad plc, Heinemann Ltd, ISBN 0 434 90321 3, £14.95

Advanced Amstrad User's Guide

by Daniel Martin, Glentop Publ. Ltd
ISBN 1 85181 018 8, £8.50

For you don't want to invest too much money in a reference work this book provides plenty of facts and figures about the CPC's internal workings. Its sections include Locomotive Basic keywords, the standard character set, machine code digits for dis-assembly work and so on.

It also explains the vectors into the operating system, listing such points as entry and exit register conditions. On the whole, though, it lacks the fine detail and informative comment of *Anatomy of the CPC's*. One for those already knowledgeable about computers who wish to study them in some detail.

Further reading:
Amstrad CPC464 Whole Memory Guide
by Don Thomasson, Melbourne House Publishers Ltd, ISBN 0 86161 199 3, £7.95
Ins & Outs of the Amstrad
by Don Thomasson, Melbourne House Publishers Ltd, ISBN 0 86161 190 X, £7.95

Exploring Adventures on the Amstrad CPC464

by Peter Gerrard, Duckworth
ISBN 0 7156 1927 6, £6.95

Intrigued but confused by the Pilgrim's pages? This could be the place to start. After a friendly introduction for the newcomer, this worthy tome then leads the reader deep into the murky world of adventures. Although some of the games referred to are getting a bit long in the tooth, most things mentioned are of relevance and interest to the would-be adventurer, and the hints and tips section contains everything important.

These days, with the *Graphic Adventure Creator* and *Professional Adventure Writer*, it may seem that a book on adventure games would have to leave out the 'Do It Yourself' section. Mr Gerrard's efforts have been left in – on balance a good decision. Although manuals for adventure creators are generally good it doesn't do any harm to have more explanation and ideas on adventure writing.

Further reading:
Pilg's pages.

Last Resort

Most books reviewed here are hard to track down through a small bookshop, although any title in print can be ordered if the full title, author, publisher and International Standard Book Number are known.

The exceptions are Melboure House Publishers Ltd. The software side of the company was sold to Mastertronic, and the publishing side no longer exists.

If a book is out of print, do not despair. Write to The Out of Print Book Service with details of the book you want, enclosing an SAE. If they come up with the goods, they inform you and quote a price. The minimum handling fee is £5,so the method is hardly cheap, but if you decide you don't want the book you needn't buy it. Write to The Out of Print Book Service, 17 Fairweather Grove East, Fairwater, Cardiff CF5 2JS. ☎ 0222 569488.

Assembly Language Programming for the Amstrad CPC464, 664 & 6128

by AP and DJ Stephenson, Argus Books Ltd, ISBN 0 85242 861 8, £7.95

Many users dream of being truly proficient in machine code. None attain it – the nearest a human can come to understanding the natural language of computers is through assembler. The Stephensons provide a standard, no-nonsense approach to learning machine code, taking the pace slowly and giving the reader time to adjust to this powerful form of programming.

One off-note is the use of a rather old assembler: the listings could have been clearer by using something more up to date. But then the book was published way back in 1986, so some ageing is to be expected. Make no mistake: the path is hard and never ending. But follow this guide and you may become a Z80 assembler programmer.

CPM Plus Handbook

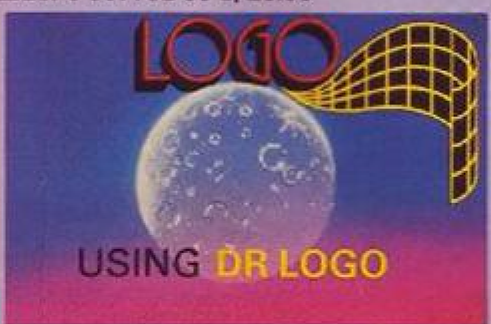
by Digital Research Inc & Amstrad Consumer Electronics plc
William Heinemann Ltd, ISBN 0 434 90321 3, £14.95

This is the official, authoritative work on CPM+, and as such its pages are packed with information concerning that operating system. The orientation of the book is towards Amstrad computers, PCW8256 as well as CPC6128.

Nor is it just a reference work. Many sections are designed to educate the user, rather than simply listing page after page of raw information. Included is a GSX supplement explaining how CPM+ can use this system to produce graphic displays. The book represents a solid, meaty read, and is geared towards the programmer of CPM+ rather than the naive user.

Using DR Logo on the Amstrad

by Martin Sims Glentop Publ. Ltd
ISBN 0 907792 56 1, £8.95



Logo is a computer language designed to be easily learned, visual and powerful. Although every disk-based Amstrad has Logo bundled with it, many people never even attempt to see what it can do. A shame, because for education and 'fun' it is much better than Basic.

This is one of the best tutorials for Logo around. It is lucid, and makes you feel that much could be done with Logo if more people knew about it. The Amstrad manuals explained a fair bit about the language, but the presentation and scale of this book is so much better.

The Amstrad Disc Companion

by Simon Williams
Sigma Press, ISBN 1 85058 034 0, £7.95

Most users don't want to delve into the workings of optional extras for the CPC's. This is particularly true of disk drives: they just want to know what the machinery can do, and how to do it. For those who want more, this 'Companion' shows what difference a disk drive can make.

The Amazing Amstrad Omnibus

by Martin Fairbanks, Interface Publs., ISBN 0 907563 82 1, £7.95

If you want a mammoth read this is for you. Unfortunately there is a disgraceful lack of boring tables, humdrum statistics and badly presented listings. Instead, you get an amazing amount of programs on a bewildering variety of subjects.

What this has that *Supercharge* lacks is a discursive commentary with wit and humour, rather than terse statements of fact. In addition the *Omnibus* is larger and generally better written. On the other hand *Supercharge*'s programs are generally of a more technical nature.

Further reading:
Powerful Programming for Amstrads – Supercharge your 464/664/6128
by W. Johnson, Sigma Press
ISBN 1 85058 046 4, £6.95

Amstrad Book 1 Starting Basic

by Sean Gray and Eddy Maddix
Glentop Publishers Ltd
ISBN 0 907792 39 1, £4.95

Amstrad Book 2 Sound, Graphics & Data Handling

by Sean Gray
Glentop Publishers Ltd
ISBN 0 907792 40 5, £5.95

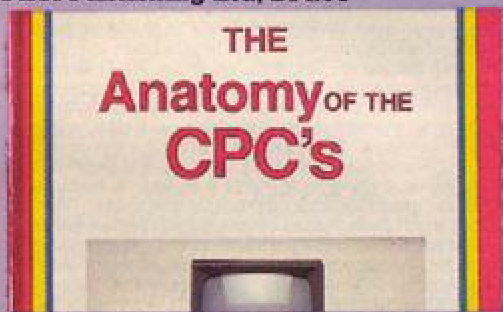
Well written they may be, but the Amstrad manuals, for many people, lack detail concerning Basic. These two books fill that gap, forming a helpful introduction to Basic programming.

The form of tutorial is to take some substantial projects and carve them up, explaining each Basic keyword as it used. This greatly aids understanding, because you see each command as part of a whole rather than as a separate entity.

Because of the obscure nature of many sound and graphic commands, this method comes into its own particularly in the second book. The scope of both works is not great, but for getting to grips with Basic they can be highly recommended.

The Anatomy of the CPC's

by Bruckman-Englisch Gerits-Stiegers
First Publishing Ltd, £14.95



An ideal substitute for the official Amsoft Firmware Guide. Though lacking in a few respects, it nevertheless provides a tremendous background for those wishing to delve deep inside the Amstrad.

This is my favourite reference book of the moment. You name it, it is covered – the various vectors and ROM routines, the video gate array, 6845 controller, Z80 processor and 8255, the AY-3-8912 sound chip. This is an authoritative guide to CPC system architecture – not just 464, but 664 and 6128 as well.

Further reading:
Amstrad CPC464 Whole Memory Guide
by Don Thomasson, Melbourne House
ISBN 0 86161 199 3, £7.95
Ins & Outs of the Amstrad
by Don Thomasson, Melbourne House
ISBN 0 86161 190 X, £7.95

Games and Graphics Programming on the Amstrad CPC464, 664, 6128

by Steve Colwill, Micro Press
ISBN 0 7447 0032 9, £9.95

A subject close to many CPC owner's hearts: making money by writing games. But don't get the wrong idea, this book is included purely for the way it demonstrates graphic techniques. And very well it does it too, with information on sound, screen layout, key reading interrupts etc. It is a fairly fast read, although to get any sort of benefit it will be necessary to digest the information properly.

What lets the book down is the fact that all of the programming is in Locomotive Basic. This makes it more understandable, and the book's value is in laying out and explaining techniques rather than forcing people to find out the hard way. Making money? You'll have to resort to machine code. Nevertheless this book represents a start on that path.

!! NOW SPEEDTRANS PLUS HAS EVEN MORE TO OFFER !!

SPEEDTRANS PLUS2

For CPC6128 (or 464/664 with DK Tronics 64K (or larger) Memory)
Once the programs has been transferred to disc IT WILL RUN ON ANY CPC.

SPEEDTRANS PLUS2 now handles the VERY LATEST Speedlock types automatically. No need to hold a key down at anytime during loading. SPEEDTRANS PLUS2 also saves 99% of opening screens and saves them in their full colours.

FULLY AUTOMATIC – JUST ONE KEYPRESS * ONLY ONE PROGRAM TO RUN WHICH FINDS THE SPEEDLOCK TYPE AUTOMATICALLY * WILL TRANSFER ORIGINAL AND MANY OF TODAYS SPEEDLOCK PROGRAMS * NO FIDDLING OR MEDDLING – WRITTEN WITH THE AMATEUR IN MIND * AUTOMATIC DISC FILENAMES * NO WASTED DISC SPACE – SAVES THE CORRECT AMOUNT OF GAME CODE * SAVES 99% OF OPENING SCREENS * SCREENS SAVED IN THEIR CORRECT COLOURS * COMPRESSES SCREEN CODE TO SAVE EVEN MORE DISC SPACE * FASTER LOADING TIMES FROM DISC BECAUSE OF SHORTER FILE LENGTHS

SPEEDTRANS PLUS2 transfers over 200 programs to Disc, some of the latest it will do are MADBALLS, FREDDY HARDEST (both games) BASKET MASTER, MATCHDAY II, PHANTOM CLUB, GRYZOR (main program), SUPER HANG ON.

These latest Speedlock types can be identified by the whole screen flashing with horizontal bands of colour immediately after the first file has loaded. Do remember that **SPEEDTRANS PLUS2** does not save all the memory in the hope of having saved all the game. It saves exactly the right length of code. All screens are saved in compressed form – some as little as 4K (Basket Master) - thus saving even more disc space.

SPEEDTRANS PLUS2 is the most sophisticated Tape-to-Disc transfer utility for SPEEDLOCK protected programs ever published. It will certainly transfer more games than any other Speedlock transfer program on the market and with much greater ease. Other transfer programs require you to know how long the game code is so that you may run an alternative program for the long games which does not save the loading screen. This is done because they do not make use of the extra memory available on the CPC 6128 or from the use of an extra RAMPACK (DK'Tronics 64K or greater.) This program is highly intelligent in that it first reads the loader from the tape and establishes which type of protection is in use from 6 alternatives. At the end of the loadit then finds out how long the code is and if it is too long to be saved to one file it will move the excess code into the banked memory and save the game in two parts and write the appropriate loader program. The screen will also be moved into a bank and compressed before saving. This can mean screen files as small as 4k (Basket Master) depending on mode and content. All this adds up to a lot less disc space being used than with other transfer programs and you will nearly always get the loading screen saved. The exception to this is when there is no loading screen (as in SCRABBLE) or when the screen is blanked out and more code is loaded into the screen memory, as in BMX SIMULATOR and MADBALLS for example. Try getting a screen with Multiface or any other imager. These imagers are only capable of saving what you have in memory at the time the button is pressed. What happens in multi part games? you have to press the button for each part thus wasting precious disc space. They also save far too much code and therefore waste even more space and saving too much code means longer loading times from disc. Programmers are now checking to see if you have an imager plugged in an if you have the program will not load. Imagers also have to be in place before you can reload your program and saved programs can only be reloaded in to the machine in which they are saved. **SPEEDTRANS PLUS2** creates totally stand-alone files and if you have nother CPC even without extra memory they will run prefectly. It also displays the saving name on screen at the start of the load with all except the very latest games. In all cases the disc saving name is displayed while the save is carried out. To run the transferred game just RUN this name. Another intelligent feature of **SPEEDTRANS2** is that the very first thing it does is to find out which drive it is in. This means that if you have a two drive system you may run the program from drive B by typing RUN"B:DISC" or :B:RUN"DISC. However the saving will ALWAYS be to DRIVE A so with a single drive you must change the disc when prompted on screen.

DISC:- UK £14.99 – EUROPE £16.25 – REST OF WORLD £17.00
Upgrade your SPEEDTRANS PLUS – send your disc together with: **UK £2.00 – EUROPE £3.25 – REST OF WORLD £4.00**
Upgrade your SPEEDTRANS TAPE send your tape together with: **UK £12.00 – EUROPE £13.25 – REST OF WORLD £14.00**

*LOW LOW PRICES * ARNOR SOFTWARE *LOW LOW PRICES *

Program	UK – Disc	Eprom	Europe – Disc	Eprom	Rest of World – Disc	Eprom
PROTEXT OFFICE *NEW *	29.50	N/A	30.75	N/A	31.50	N/A
PROTEXT FILER *NEW *	19.50	N/A	20.75	N/A	21.50	N/A
PROTEXT	21.50	34.50	22.75	35.75	23.50	36.50
PROSPELL	19.50	29.50	20.75	30.75	21.50	31.50
PROMERGE (ROM=PROMERGE PLUS)	19.50	29.50	20.75	30.75	21.50	31.50
MAXAM *THE BEST! *	21.50	34.50	22.75	35.75	23.50	36.50
MAXAM 1 1/2 *NEW *	N/A	24.50	N/A	25.75	N/A	26.50
UTOPIA	N/A	24.50	N/A	25.75	N/A	26.50

Purchase the Rombo romboard and we will give you a futher £3.50 discount on each rom program

ROMBO ROMBOARD UK – £31.00 EUROPE – £33.00 REST OF THE WORLD – £35.00

DMP 2000/2160/3000/3160

The printer buffer presently in the DMP 200/3000 series is a 2K RAM. Most of this RAM is used by the printer's operating system leaving an average 1/2K as buffer space. Our upgrade kit contains a new static RAM chip which will increase the printer buffer by 6K (about 4 pages of text). This upgrade allows all Download Characters to be re-defined allowing the user to design special characters for use with scientific and other programs. The kit is supplied with full pictorial instructions to allow the amateur to carry out his own modification (the DMP2160 takes about 7 minutes). If you don't think you are up to it your local TV shop can do the job in approximately 15 minutes.

UK £9.00 – EUROPE £10.25 – R. of W. £11.00

FIRETRANS

This utility will transfer a number of FIREBIRD programs from tape to disc automatically including most opening screens in full colour. FIRETRANS will work equally well from tape but will be more convenient to use if converted to disc with SAMSON/Transmat. It will transfer WILLOW PATTERN, RUNESTONE, CHIMERA, GUNSTAR, PARABOLA, REALM SPIKY HAROLD, BOOTY, DON'T PANIC, GUNFRIGHT, STARGLIDER, NINJA MASTER, HELICOPTER, and some version of THRUST, HARVEY HEADBANGER and BOMBSCARE.

TAPE:- UK £5.00 – EUROPE £6.25 R. of W. £7.00
DISC:- UK £8.50 – EUROPE £9.75 – R. of W. £10.50

NEW COMPACTOR NEW

COMPACTOR will allow you to load a standard 17K screen, set the mode, border and ink colours and then save it as a compressed screen containing its own mode and ink colour information. Most screens compact down to an average of 9K which is an enormous saving on disc space. Loading time of compressed screens is also proportionately reduced.

TAPE:- UK £5.00 – EUROPE £6.25 R. of W. £7.00
DISC:- UK £8.50 – EUROPE £9.75 – R. of W. £10.50

TRANSIT

TRANSIT is a disc-to-disc file copier which handles file upto 40K in length in one pass. It will copy from drives A-A, A-B, B-B and B-A making an ideal utility for use with 5 1/4" second drive.

TAPE:- UK £4.50 – EUROPE £5.25 – R. of W. £6.50
DISC:- UK £8.00 – EUROPE £9.25 – R. of W. £10.00

UTILITY DISC No. 1

This utility disc contains 5 programs, all menu driven. They are SAMSON, TRANSIT, QCLONE, VIEWTEXT and the last disc FORMATTER.

DISC:- UK £15.50 – EUROPE £16.75 – R. of W. £17.50
ROM:- UK £17.25 – EUROPE £18.50 – R. of W. £19.25

ADVANCED MUSIC SYSTEM

When you buy Rainbird's Advanced Music System from us we will give you

ABSOLUTELY FREE OF CHARGE

A disk containing THE GOLDMARK COLLECTION of virtuoso demonstration music files by Rob Baxter some of which have been written especially for us

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NEW NIRVANA NEW

Have you tried backing up your original expensive disc software and failed? Use NIRVANA before its too late! NIRVANA (meaning enlightenment) is an extremely powerful disc handling utility which has the following features: Disc to disc back-up copier which will handle most of the commercially protected discs available today. File copier for individual files. Disc formatter, much easier to use than CPM. Change file attributes. Erase files. Change filenames. Will handle all disc drive combinations.

DISC:- UK £14.99 – EUROPE £16.25 – R. of W. £17.00

NEW SHAREPLAY NEW

THE STOCK MARKET SIMULATION
(All CPC's)

This is a serious educational program for 1 to 6 players and provides all the enjoyment of playing the stockmarket without any risk of personal bankruptcy!! Each player can buy and sell shares and the target is the first to reach £1,000,000. The program includes a stockholding portfolio listing the shares purchased, their number, cost and market value. Bank balances are also shown. Graphical representation of market fluctuations are given in the form of a bar graph. Also included is a high score table. Scores are automatically saved at the end of each session.

DISC:- UK £14.99 – EUROPE £16.25 – R. of W. £17.00

NEW WORDSEEK NEW

THE WORDSEARCH PROGRAM
(All CPC's)

This educational program will tax even the most agile mind. The aim is to find the hidden words in a 15 by 15 puzzle within a set time limit of 30 seconds. The time limit is extended for every correct letter of the current word found. You may create your own puzzle consisting of up to 10 words which can be saved to disc and used at any time. You may only retain one puzzle at a time but if you choose not to use your own puzzle then the program will randomly select one form the library of 50 on the disc. All of the puzzles in the library are made up of 10 words each consisting of 1x8 letter, 1x7 letter, 2x6 letter, 3x5 letter, 2x4 letter and 1x3 letter words. This ensures equal difficulty regardless which one is randomly loaded. The program contains a print option (for Epson compatible printers) allowing a hard copy to be made of any puzzle created. Keyboard/Joystick options are also available.

DISC ONLY – U.K. £14.99 – EUROPE £16.25
REST OF THE WORLD £17.00

NEW TUNESMITH NEW

TUNESMITH is a simple to use sound utility which allows you to use the keyboard to play and record your tunes. No knowledge of music or Amstrad sound commands is required all you need to be able to do is whistle the tune you play or record. The octave and period of notes is variable and the program includes synthesizer and vibrato effects. **TUNESMITH** will save any tune as a basic file which can be RUN, CHAINED or MERGED into your own program.

DISC:- UK £14.99 – EUROPE £16.25 R. of W. £17.00

SAMSON

SAMSON has been developed by us to transfer not only the normal programs but also many of todays where the code is much longer. **SAMSON** differs in many ways from other Tape-to-Disc utilities, the main differences being: * SAMSON retains original file suffixes (SAMSON.SCN will be saved as SAMSON.SCN) * Improved file relocation method * Elaborate Tape-read/Disc-write system which reduces Tape Motor, Slave Replay and Disc Drive Motor wear substantially. * A large reduction in tape transfer time is also achieved in all but a few cases * NEW "SPLIT" option for todays longer games (we will be using this option in future routines) * All file information is displayed on screen and can be echoed to your printer if needed. SAMSON also transfer itself to disc.

TAPE:- UK £7.50 – EUROPE £8.75 – R. of W. £9.50
DISC:- UK £11.50 – EUROPE £12.75 – R. of W. £13.50

CHARACTER DESIGNER

(All CPC's)

- **REDEFINE YOUR PRINTER DOWNLOAD CHARACTERS**
- **REDEFINE THE COMPUTER SCREEN FONT**
- **REDEFINE ANY/ALL KEYBOARD KEYS (ASWERTY)**
- **DESIGN SPECIAL SCIENTIFIC CHARACTERS/FONTS**

Takes all the hard work out of character designing making it a pleasure. The printer part of the program will only work if your printer is capable of DOWNLOADING and is EPSON compatible – see your printer manual. Works with 7-bit or 8-bit output (8 bit port). All the designing is done "On-Screen" so you can see exactly what you are doing. You can save your newly designed characters to disc and reload them at any time into a basic program and into most Word Processors. The program also allows the user to redefine any or all of the keys on the keyboard. This feature will be useful for those who require an ASWERTY keyboard. The disc also contins twelve sample fonts for experimentation.

TAPE:- UK [illegible] EUROPE £9.25 – R. of W. £10.00
DISC:- UK £1[illegible].99 – EUROPE £13.25 – R. of W. £14.00

FAST FORMATTER

The FASTFORMATTER will format one side of a disc in approx. 30 seconds with the choice of DATA, VENDOR or SYSTEM and its much easier then using your CPM disc.

TAPE:- UK £4.50 – EUROPE £5.25 – R.of W. £6.50
DISC:- UK £8.00 – EUROPE £9.25 – R.of W. £10.00

Please send your cheque (£ Sterling) Eurocheque OR UK P.O. to
GOLDMARK SYSTEMS, 51 COMET ROAD, HATFIELD, HERTFORDSHIRE, AL10 0SY. ENGLAND
Please write or telephone (07072 71529 for full brochure.

HOT TIPS

Another clutch of your serious soft/hardware tricks and tactics – and remember, each month the best tip wins £20!

Not fade away

Printer ribbons don't wear out, they just fade away. So why not try re-inking them? Endorsing ink from stationery stores seems about right. The right hand ribbon holder – the one with the circular raised section – can easily be prised apart to reveal a felt pad and two small rollers. Put a few drops of ink on the pad and then carefully re-assemble the unit.

The result is *really* black characters. (The print may be a little uneven at first: just run the self test to give the ribbon a few runs over the rollers.) Wear rubber gloves applying the ink. You'll feel pretty silly, but you won't get stubborn ink stains all over your pinkies!

M A Jarvis, Sedgley

Colour supplement

There is a way of getting more than the allowed number of colours of that mode on the screen at the same time. Simply use or modify the listing below.

```
50 MODE 2
60 INK 0,0:INK 1,26:BORDER 0
70 ' Set transparency mode
80 PRINT CHR$(&16);CHR$(1)
90 LOCATE 20,10
100 PRINT "Mike Greenwood's Colour Program"
110 LOCATE 20,10
120 PRINT "____ ________ ____ "
130 WHILE INKEY$=""
140 OUT &7F00,0
150 OUT &7F00,96
160 OUT &7F00,103
170 WEND
```

Run this program and you find three colours on the screen at the same time. Try adding the following lines:

```
155 FOR a=1 TO 2:NEXT
165 FOR a=1 TO 2:NEXT
```

Also try altering the numbers in lines 150 & 160 after the comma – use a range of 64-127.

Mike Greenwood, Abode Unknown

Hacker hacked

AA33 Hackers Only was incorrect. To get the routine working insert `LD B,A` after the `ORG` statement, and replace the `LD A,(IX)` with `LD A,B`. And you reserved memory for `Store` instead of `Buffer` in the last line.

David Jameson, Belfast

Screen swap

A quick way of swapping screens between &4000 and &C000. First load a screen as normal – i.e. `LOAD "filename",&C000`. Next type `CALL &BC06,&40`, and the screen clears. It's a good idea to write a program to do this, otherwise the command appears on the screen. To recall it, use `CALL &BC06,&C0`.

Matthew Cawley, Deeside

Sweeten Honeysoft

Honeysoft's *Amstrad Assembly Language Course* is a very good program for beginners but a little weak in presentation.

These modifications establish two windows, the left being mostly for editing listings, the other for source file and display purposes. It's useful to have this information available when altering the source code.

```
64017 KEY 138,"MODE 2:GOTO 64026"+CHR$(13)
65025 MODE 2
64026 WINDOW 1,40,1,21:PLOT 320,55,1:DRAWR 0,400:PLOT 1,55:DRAW 640,55:CALL &BC02:PEN 1:PAPER 0:WINDOW #3,42,80,1,21
64089 INPUT "Starting line number";n1:CLS #3:WINDOW SWAP 3,0
64108 WINDOW SWAP 3,0:RETURN
64244 WINDOW SWAP 3,0:CLS:POKE 13007,n-1
64250 WINDOW SWAP 3,0:c$="E":RETURN
```

There shouldn't be any problems with this because the Basic is unprotected.

Note that a time-saving point not clarified in the manual is that if you end the external command table of an RSX program with the command `RET`, the program does not crash if you mistype an RSX's name.

Sean McManus, Stevanage

Stop press!

- You cannot load *Advanced Art Studio* screen files into *Stop Press*, but you can load *Stop Press* files into *AAS*. The file extension is `.SPS`.
- The `DIGDEMO.SPS` file on side two of the systems disk can be loaded in either mode 1 or 2. Also on side two are some excellent digitized cutouts that are well worth a look.
- Loading a cutout with the gridlock switched on you may be able to place some of the cutout over the ruler/menu and erase it. But take care! This cannot be undone, so be sure you've got your cutouts positioned before pressing move to load them.
- To obtain best results with the Amstrad font select 'adjust' from the menu, and adjust the spacing to 3 inch in the x direction and 1 inch in the y direction. For all 16 X 16 fonts, adjust the spacing to 2 in the x axis and 1 in the y axis.
- On the `Extra!Extra!` disk (packed full of clip art and fonts), the spacing for the Hitec70, Thin80 and Teeny90 fonts should be changed to 3 x and -7 y.
- When you use the autoflow option don't place the text cursor on a line or graphic, but in line with it. The cursor corrects its position automatically.
- When you position the text cursor in a window never place it actually on the line of the window, because some of the pixels making up the line will be removed.
- When entering text manually and using autoflow it's best to add a space at the start of each new line, because otherwise the text starts right at the edge and is difficult to read.
- Creating text files with a word-processor? Don't use word wrap or justification.
- Text windows do not invert before you clear them: graphics windows do.
- The NTQ printing option produces slightly blurred results. The standard option, although lighter, is clearer.
- And don't worry that your printer ribbon will wear out very quickly. I have printed more than twenty full pages using the standard quality setting and the ribbon is still going strong.
- When using the page position icon to move the page about, be warned that the page does not go right down to the bottom. You have to move the page up manually to access the last few centimetres.
- Users thinking about buying *Stop Press* who want to see some printouts first can get them from me. The charge is 50p – and while you're at it, enclose any questions about the system.

Phillip Stoddart, 6 Shortsfield Close, Horsham, W Sussex, RH12 2NA

Really useful tips, Phillip: £20 on the way.

PROBLEM ATTIC

There he goes again, that Pat McDonald, solving people's problems. Shouldn't be allowed.

Short memory

I saved a program which was 38913 bytes long but I can't save one of 40574 bytes – it keeps coming up `Memory Full`. How much memory does SAVE use?

D Holmes, Mid Glamorgan

The SAVE command uses a 2K (2048 bytes of memory) buffer to store data in. Although a 464 tape system has more usable memory than a disk system a program of maximum size on a 464 should have a memory setting of about 40500, allowing for the minimum of variables. Looks like you'll have to optimize your program, perhaps even split it into two.

No connection

I am having trouble with 5V DC and monitor connections on my 464 (bought back in '83). To get a picture I have to fiddle with the leads connecting the monitor to the computer. Sometimes the screen splits diagonally, other times the colours change. (I know because I have a modulator.)

A Higham, Liverpool

Sounds as if the connecting ports are worn out. Both sets of symptoms are caused by an intermittent synchronisation signal. For a fault like this your local TV repair man should be competent.

Lost assembler

I'm a Amstrad CPC464 owner writing pull-down menus in Z80 assembly. The trouble is that I don't know how to locate text on the screen using assembler language.

David Hookway, Southampton

Within the CPC operating system there are a series of ready made entry points for your own machine code work. They are fully documented in SOFT968 from Amsoft: unfortunately it costs a hefty £19.95. Nearly as good is *The Anatomy of the CPC's* by Bruckman-Englisch Gerits-Steigers, published by First Publishing Ltd at £14.95.

To NMI, or not to NMI

Is there a way to stop a machine code program in mid-flight, and pass control over to another small routine in memory? I want to do this with programs which run with or without interrupts. I have heard of an NMI (non-maskable-interrupt), but I can't get it to work. The vector for this is at &66, but I don't know how to trigger it. (Expansion port pin 36+GND?)

Thomas E Jolly, Northumberland

Your theory is fine, but unfortunately you have to ensure that the lower ROM is switched out. Otherwise the vector at &66 will be read from it and your program won't work.

Career decision

I want to be a programmer. I have mastered Basic: what language should I choose next?

Matthew Davey, Australia

That depends. If you want a training job with a company qualifications count more than experience with languages on a CPC. On the other hand if you want to be a free agent programming on an Amstrad then it depends what your market is. For writing games machine code is really vital, but for business applications high level languages like Basic or C would be better – writing in these is generally faster.

Take heart – we're printing your type-in next month!

Echo from the past

A back number of *AA* (8) which had a cover cassette had a program inside for transferring it to disk. It doesn't work!

J Williamson, Manchester

An update appeared in *AA*9:

```
10 OPENOUT "D":MEMORY 4999:CLOSEOUT
20 |TAPE.IN:LOAD "":POKE 42558,201:CALL 42554
30 SAVE "COV",B,5000,37544,10887:|DISC
```

You just type RUN"COV" to load the game.

Programmer blues

If I try to load anything else when the 464-6128 converter program (Christmas tape) is in memory I get the `Bad Command` error. I can get round it by MERGEing it with what I want to use, but I would prefer a more convenient way of using the program.

Secondly, please tell me what the last 1 does in the 6128 command:

```
DRAWR x,y,1,1
```

My last query concerns a problem with my own listing in which the delete key is ignored:

```
1340 'key in routine
1350 answer$=""
1360 z$=INKEY$:IF z$="" THEN 1360
1370 IF z$=CHR$(127) AND answer$<>"" THEN temp$=LEFT$(answer$,LEN(answer$)-1):answer$=temp$:z1=POS(#1):z2=VPOS(#1):LOCATE #1,z1-z,z2:PRINT SPACE$(1):LOCATE #1,z1-1,z2:GOTO 1360
1380 IF z$=CHR$(13) THEN RETURN
1390 IF z$="a" and z$ <="z" THEN z$=UPPER$(z$)
1400 IF z$=" " THEN 1420
1410 IF z$ < "A" OR z$ > "Z" THEN 1360
1420 PRINT #1,z$;:answer$=answer$+z$:GOTO 1360
```

Robin Brown, Inverness

I have no ideas about the first point (any suggestions?), but last 1 on a graphics statement selects XOR graphics mode. A 0 at the end means normal, a 2 stands for AND and a 3 will get OR mode. To use it on a 464 type:

`PRINT CHR$(17);1` (or 0,2 or 3)

Line 1370 is supposed to do the business. Rather than all that messing about with POS and SPACE$, why don't you use the codes for backspace and space? All the control codes and their uses are in the back of the manual, but here is a working line:

```
1370 IF z$=CHR$(127) AND answer$<>"" THEN temp$=LEFT$(answer$,LEN(answer$)-1):answer$=temp$:PRINT #1,CHR$(8);" ";CHR$(8);:GOTO 1360
```

The man from *Problem Attic*, he say yes!

I am interested in your offer in *AA32* for *Master Machine Code on your Amstrad 464 & 664* by Jeff Naylor and Diane Rogers. I have a 6128: will the programs work on my computer?

Stephen Pugh, Bridgend

(Here it comes, all together now) Yes.

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VISA

The case for data-merging

After careful hours spent weighing the evidence, Pat McDonald passes judgement on Brunning's new release

INFO-SCRIPT 6128

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Many moons ago Brunning software released a word-processor by the name of *BrunWord*. More recently – to critical acclaim – *BrunWord 6128* was launched. Now they've come up with something off their beaten path: *Info-Script 6128*.

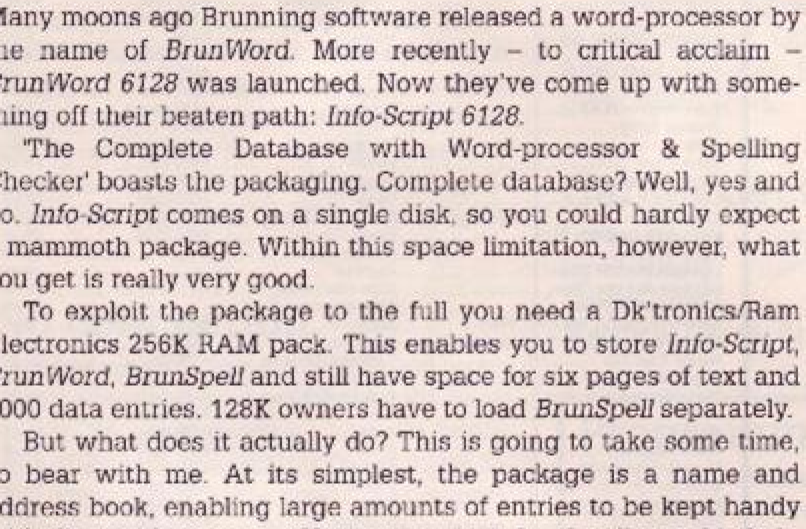
'The Complete Database with Word-processor & Spelling Checker' boasts the packaging. Complete database? Well, yes and no. *Info-Script* comes on a single disk, so you could hardly expect a mammoth package. Within this space limitation, however, what you get is really very good.

To exploit the package to the full you need a Dk'tronics/Ram Electronics 256K RAM pack. This enables you to store *Info-Script*, *BrunWord*, *BrunSpell* and still have space for six pages of text and 3000 data entries. 128K owners have to load *BrunSpell* separately.

But what does it actually do? This is going to take some time, so bear with me. At its simplest, the package is a name and address book, enabling large amounts of entries to be kept handy with the word-processor. Very convenient, but hardly world shaking.

Earthquake!

What makes *Info-Script* unique is the high level of data integration and interdependency. In some comparable databases records must be of a similar type, the only concession to individuality being that some records can be empty. With *Info-Script* fields in records can actually refer to other records.



● *Info-Script* from the front

Let's illustrate with an example. Supp-ose you were a stock person looking after a warehouse. Not only would you need to store each part type, you would need a list of suppliers as well. And if a part were available as a set of sub-components you would like to store those as well as their suppliers. All well and good, but linking them together would prove very difficult.

Not so with this program. It really does let you have a free form database. Well maybe not quite... If you change the format of records and then try to perform operations on them *Info-Script* gets moody. It's a bit like trying to compare two completely different things, like the colour blue and the number 7.

Getting back to the example, the system allows two forms of linking records together: if the root file is called the **parent**, then the two types are **sons** and **daughters**. The difference is important: the first is merely a subset of the parent, while the second is more of a record in its own right.

Getting in

Info-Script loads in the usual manner, first asking for the date and then displaying a main menu. The options from here are as follows:

Load/Save lets you load in and save data files, all of which are automatically prefixed with the '&' symbol to differentiate them from*BrunWord* files.

Edit/New/Reuse: various commands to let you change the data. The last named clears out data but leaves a shell for you to use.

Variation: for creating different field formats. Subsequent records use the new format until it is changed again. Each prompt can be a maximum of eight characters, and the total space for each template is 160 characters. Not a great deal, but sufficient for most uses.

Clear file, Kill record, Find phrase, Get record and **Print** speak for themselves.

Extra bits

It is unfortunate, with so many programs around – and especially with serious software – that optional extras cost more and must be purchased separately. Not so with *Infoscript*: also included are *BrunWord 6128* and its attendant spell checker, *BrunSpell*.

These were fully reviewed in *AA22*. Here though is a brief rundown of just what it's like to use them.

When you load *BrunWord* you are taken to the front end of the program, rather than being dumped straight into it. This menu is in 40 column mode 1, but the word-processing is done under mode 2 – that is, across 80 columns. All the features necessary are there, such as real insert or overwrite, word count, cut and paste etc.

There are also some extra ones, including true onscreen representations of superscript and subscript, useful for chemical equations and the like; paragraph definable margins; multiple file printing, and full justification.

Richard Monteiro, *AA* technical editor at the time and all round wizzo-boffin had this to say about it: 'Not only does it outperform many word-processors on the market, but it's friendly and fast'. That's just as true today.

The spell checker is also very good, with 30,000 words built in and room for some 5,000 more. This is memory resident when you use *BrunWord* on its own. *BrunSpell* is also pretty fast and offers a list of possible words when it comes across a word it doesn't recognise.

The only thing that lets the word-processor down is its fairly slow screen operations. The find/replace and justification are fairly fast, but *Protext* is faster for cursor operations and scrolling.

Best of enemies

Last issue *AA* reviewed *Protext Office/ Protext Filer*, a product very similar to *Info-Script*. (The only difference between *Filer* and *Office* is the latter's invoice printing capability.)

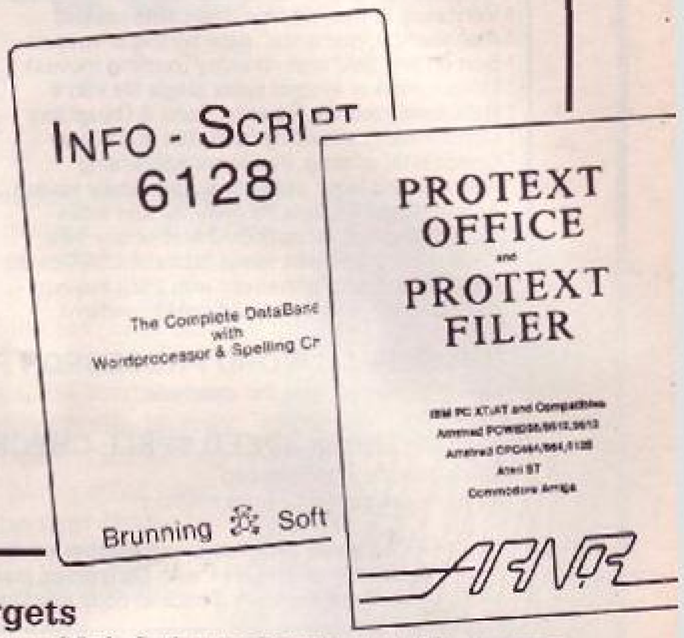
Choosing between Arnor and Brunning's offerings is not easy. Their intended purpose is the same – a word-processor based database. Both incorporate similar facilities for invoices and linked records.

Info-Script is much faster than *Office*, because it stores data and programs in the extra memory. As a consequence of that it is only usable on 128k RAM machines.

Office, on the other hand, is a disk based program. It doesn't need 128K of memory, but as a direct consequence it is slow in its start-up procedure, amongst others. Its formatting and storage/retrieval capabilities, however, are similar to those of its rival.

Info-Script gets you started without too much fuss. Indeed the program itself is a little easier to use than *Office*. It must be said, however, that its manual lacks the resolution necessary to get you into subjects such as changing the invoice style and data merging. Furthermore, like all too many of its kind it is not a masterpiece of western literature, and lacks an index.

On the whole I would recommend *Info-Script* over *Office*, unless the potential buyer already owns *Protext*, *ProMerge* and – if a spelling checker enters the equation – *ProSpell*. Quite simply, *Info-Script* represents the better **system**. *BrunWord* is not as good a word-processor as *Protext*, but *Info-Script* is a better all around package than *Office*.



Directory gives an overview of all the records in the database at the same time (rather than a disk catalog).

Quick list or Sort produces a selection according to **Markers** set.

Supplier	F	Contact	Street	Town
Abbott	H	Mr	11 Acorn Crescent	Chichester
Adler	G	Mrs	7 Broom Road	Brentwood
Allen	P	Mr	8 Margaret Avenue	Harlow
Andrews	M	Miss	12 Woodside Close	Birmingham
Andrews	M			
Andrews	M			
Andrews	M			
Audio	A	MS 45	15	86.31
Audio	A	TS 46	15	104.30
Ayers	B	Mr	76 Hill Lane	Reading
Barber	M	Mr	6 Daisy Road	Wembley
Barker	D	Ms	22 Avalon Street	Braintree
Barnes	S	Mr	5 Clover Avenue	Liverpool
Bates	M	Mr	7 Spring Road	Chelmsford
Bird	S	Mrs	10 News Lane	Southend
Bob Discs Ltd			The Disc House	The Strand

● The directory – a faster method of checking records

Unravel gives a **Quick** list in alphabetical, numerical or chronological order.

Multi-merge is one of the most powerful options. Many people are familiar with the conventional mail-merge facilities to store names and adresses, and send the same form letter out to hundreds of different people. *Info-Script's* **Multi-Merge** is a complex feature that allows the creation of whole composite letters made up from many different records.

The different markers used in *BrunWord* documents refer to different fields within the *Info-Script* data file. This means that, for example, placing the marker **&A** within the document will cause the printer routine to print the address field. Similarly **&F** inserts the forename.

Some of these markers refer to operations such as justification and insert or overwrite modes, while others refer to arithmetical addition and VAT calculations for invoices. These items pack the punch behind *Info-Script's* power, and they are fairly easy to understand.

For those who want to see just what goes into a data merge, there is a single step option available to save wasted time (and of course printer paper).

Talking of printer paper *Info-Script* allows the user to change the printer (if Epson compatible) to either 80, 96 or 127 column mode, equivalent to Pica, Elite and condensed fonts.

Brunning's targets

It is no harsh criticism of *Info-Script* to observe that this program is not of much use to many users. Its power is such that it really needs a meaty application to work on such as a mailing list, large club or customers/suppliers for a business. The key fact when deciding whether it's suitable for your problem is that it can handle standard 1,000 records on a 128k and 3,000 on a 256K machine.

If your needs are above this magnitude then it is likely that you are better served considering a conventional database – and in all likelihood on a different machine. On a CPC *Info-Script* really

```
Supplier BZ Wholesale
Forename
Contact.
Street.. 178 Main Road
Town.... Coventry
County..
Code.... CV5 7HJ
'Phone.. 564328

>Link... BZW
Action.. ORD 12,3,88

+Order1. M6128      234.75  *4     939.00
+Order2. CF-2         2.34  *500  1170.00
+Order3. FD-1        78.22  *2     156.44
+Order4. JY-2        11.70  *4      46.80
+Order5. MP-2        23.44  *1      23.44
+Order6. DMP2000    124.43  *2     248.86
+Order7. RS232       46.92  *3     140.76
+Order8.
+Order9.

&Total.. 2725.30
&DATA        Tot  89  Sel  89  1A   D 4
Info-Script          Markers   2    0
```

● Here's an *Info-Script* record

is the pick of the bunch as far as an integrated database/ word-processor goes, due to its versatility and price. One final point: the package would have been better served by a little more 'manual labour'.

GOOD NEWS

- **Really gets some performance from a 256k machine.**
- **Well set up and easy to get into.**
- **Changes in layout and content possible once the program is mastered.**

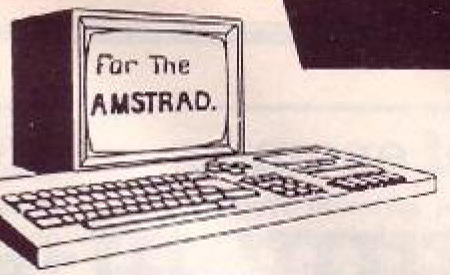
BAD NEWS

- **256K expansion needed to handle records over 1,000.**
- **Manual is cloudy, especially on more advanced features.**

Info-Script

Designed for the Small Business

A fast and friendly database integrated with a powerful word processor & spelling checker



*** FAST FRIENDLY DATABASE PROGRAMME ***

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* Unique marker system splits single file into 4
* Relational records, Parents, Sons & Daughters
* Conditional text loading from disc or memory
* Conditional printing, intelligent addressing
* Address and letter patterns automatically loaded
* Arithmetical functions for invoices and totals
* Search routines for specified field or any field
* 1000 names and addresses (standard CPC6128)
* 3000 names and addresses with 256k memory
* Supplied with examples and preset patterns

*** SUPERB WORD PROCESSOR PROGRAMME ***

* Memory resident with the database

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* Easily loaded when needed
* Memory resident with extra memory

All three Programmes together on 3in Disc £46.00
CPC6128 or CPC464 with Dk'tronics memory expansion
(Price includes a backup copy and Disc Extension)

Originally, Info-Script was intended to be a separate programme but with consideration to the many letters of appreciation from BrunWord users, we realised that the single disc concept is very important. We have also had a large number of comments complimenting the friendliness of DataFile (BrunWord package).

Info-Script has been written to retain the easy style of DataFile but is a powerful database fully integrated into BrunWord, so that both programmes can be present in the memory at the same time. At its simplest, Info-Script is no more complex than DataFile but with the attraction of direct access from the word processor, many new and enhanced facilities and the ability to store at least twice as much data. It is possible to have Info-Script, Brunword with all its facilities, 1000 names and address and six pages of text all in the memory at the same time and to switch at will between the word processor and the database, keeping the same cursor position in BrunWord.

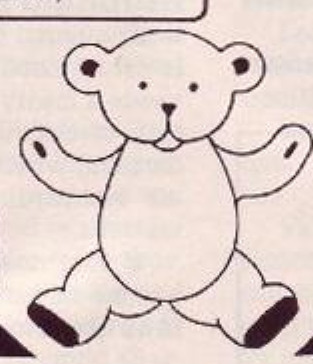
Browsing through records is delightfully easy with the ability to go forwards and backwards, skip to a SON or DAUGHTER, return to the parent and continue browsing. Info-Script has arithmetical functions, three sets of heading and a unique marker system which is like having four files in Info-Script at the same time.

Data can be easily transferred to the word processor to create personalised letters, invoices, purchase orders, marked down stock list etc. The simplest personalised letters use special markers &A &N &D which construct a full address, a full name and insert the date respectively. Data merging at its simplest couldn't be easier and yet as your skills develop you will use conditional printing, conditional loading, repeat markers, reset markers, justify on/off marker, add into total marker, add % into VAT total and so on.

Very complicated data merge patterns can be created but to make it easy to get started we provide examples that take you right through from producing simple personalised letters to producing a complete invoice and purchase order using data and patterns that we supply on the disc.

FILECON is provided to convert data from other databases.

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Telephone (0245) 252854 (24 Hours)

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"BrunWord is a very competent programme" – AMTIX
"Real value for money ... user friendly and fast" – Amstrad Action



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** Displays true print format

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Disc – £7.50 (Needs BrunWord S/No EH, EI, FH or FI)

BrunWord

BrunWord is recognised as unbeatable with its superb system of justifying text, it has an excellent editor, a continuous "see what will be printed" display, comprehensive printer facilities and responds almost instantly to all routines.
* True insert and Overwrite * Touch typing speed * Fast block save, move, copy, insert & delete * Quick local editing with word delete/undelete * Adjustable margins and TABs * Instant word wrap * Column/Line/Page display with file name * Find and replace * Security code * Help menus * Single character embedded printer commands * Page throw markers * Multiple copies * Odd/even page headers/footers with page numbers * Multi file printing with full facilities * Print specified pages * Full printer features work with any printer * True word count * True display super/subscript numbers * User defined print characters * Tired eyes facility.

BrunSpell

BrunSpell is the fastest and most convenient CPC spelling checker. Even the 464 version is faster than Prospell on ROM. BrunSpell 464 is supercharged to 1700 words/minute, including dictionary loading time but BrunSpell 6128 is the champion at 2500 words per minute. BrunSpell 6128 and the 30,000 word dictionary are loaded at the same time as BrunWord and the total loading time is only 10 seconds. Why be slowed down with Protext/Prospell on ROM!

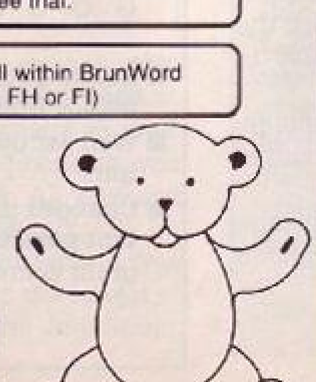
DataFile

DataFile is specially written to complement BrunWord and is a card filing programme with very fast access. BrunWord justifies the text before printing. Labels, reports, personalised letters – DataFile has unlimited print formats using BrunWord.

How BrunWord Compares

Take as an example the justification process. Tasword uses an out dated method where spaces are added only from the right hand side. This has the effect of making the lines appear to stretch across the page. The Tasword system should be much faster but in fact Tasword takes 19 seconds for a 306 word paragraph while BrunWord takes just 1.5 seconds.
Tas-spell has a similarly disappointing performance. The text of our free booklet was checked by Tas-spell after the 37 unknown words had been saved, and it took a staggering 18 minutes and 31 seconds for the 3455 words. BrunSpell took just 1 minute 21 seconds for the same test.

Send cheque/postal order/access number to:



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Bar CPM

A history lesson from Richard Monteiro, and heaps of contacts for PD software

CPM: its acronym has several possible translations, but the most used and most plausible is Control Program for Micro-computers. The operating system grew out of the need for some form of standardisation. The early 1970's saw the dawn of the personal computer age. There were too many machines, with more appearing all the time, and no easy way for them to communicate with existing hardware or software. Then came CPM.



● Garry Kildall – creator of CPM

Before CPM's arrival a computer user would have to write a program – or steal another user's routine – to do mundane tasks (taken for granted on today's operating systems). Gary Kildall radically changed this. His program, or operating system, worked on any 8-bit computer assuming the machine had 16K of memory and contained an 8080, 8085 or Z80 (like the CPC) processor.

The success of CPM was immediate and immense: it could be adapted to other micros quickly and easily, computer manufacturers didn't have to re-invent the wheel, and – at the time – it was the only operating system available that could control floppy drives.



Pioneer buyers of CPM were hobbyists, the type of bearded boffin heavily into homebrew hardware. As chances of any two systems being alike were remote, CPM was the firm favourite of the buff as few modifications were required to get the operating system running.

Intergalactic Digital Research (Inter-galactic was eventually dropped when a company called Digital Research went bust) was formed by Kildall in 1976 as the success of CPM grew. By the late 1970's over 900 firms were using the system. Today Kildall estimates that over 200 million copies exist. And over 300 computers make use of CPM (one of which, in case you didn't know already, is Amstrad's CPC).

An interesting story surrounds MS-DOS (the IBM PC operating system equivalent to CPM). In 1981 IBM decided to enter the personal computer market, but it needed an operating system. For some bizarre reason IBM thought that CPM was owned by Microsoft, rather than DR. Consequently IBM approached Microsoft to write a version of CPM for their forthcoming 16-bit PC's. Naturally Microsoft couldn't sell such an operating system; rather than lose out on a lucrative business deal Microsoft came up with an alternative, MS-DOS.

When Kildall tinkered with the PC-DOS (IBM's name for the MS-DOS system), he turned a little green. The command structure and layout was so obviously ripped off from his system. He confronted IBM on this and was assured that IBM didn't realise the operating system was so close to CPM. Nobody takes IBM to court if they want to stay in business. Kildall is still in business.

Today Kildall runs his own company, KnowledgeSet – he may be working at the cutting-edge of technology, but putting a capital letter mid-word is old hat – looking at methods of using optical disks (laser disks and compact disks) for storing computer data.

Where to go...

...for public domain software:

- **Advantage** ☎ 0242 224340 West One House, St Georges Rd, Cheltenham, GL50 3DT
- **CPM User Group** 72 Mill Road, Hawley, Dartford, Kent, DA2 7RZ
- **PD Software** ☎ 08926 63298 Winscombe House, Beacon Road, Crowborough, East Sussex, TN6 1UL
- **Triple Zero Services** 23 Broad Lane, Essington, Nr Wolverhampton, Staffordshire, WV11 2RG
- **PD-SIG** 90 Braybourne Close, Uxbridge, Middlesex, UB8 1UJ

Most of these publish a newsletter and have vast software libraries – not all will be of interest. There is usually a subscription and copying fee for each disk. Do remember to enclose a SAE when enquiring.

User clubs are also a good place for getting public domain. **Wacii** (0895 52430) in particular have a selection of disks crammed with stuff. Well worth checking.

The **United Amstrad User Group** offer free PD software to club members. Free PD software – but surely it's free anyway? Well, yet it is, but most libraries charge a handling fee.

To enrole as an UAUG member send **£5** to **1 Magnolia Close, Fareham, Hants, PO14 1PX.** For this you get a bi-monthly magazine and access to 2 megabytes of PD software. Enquiries on **0329 281324.**

Before you order disks and disks full of PD software you might like to try getting your hands on *The Free Software Handbook*. This book published by PeopleTalk Associates covers the best public domain software available. See the box elsewhere on this page for further details.

We continue to update this list, so if you know of any worthwhile libraries, bulletin boards, or user clubs do get in touch.

Free software – to you, £40

The *Free Software Handbook*, a compendium of public domain software for CPM-based computers, published by Peopletalk, is difficult to get hold of. Reason number one is it's an American publication. And two, we've been printing its ISSN (It's Such a Stupid System). We've discovered a UK supplier which should make things easier. Davis/Rubin, 0386 853610, distribute the *Free Software Handbook* with ISBN number 0-915907-07-0.

Unfortunately the price is an outrageous £39.95. There is just no way is it worth that much: the US price is $17.95 (the cost of a game on disk, roughly £14.95).

ABSOLUTE BEGINERS

Our series taking you from complete ignorance to complete mastery of Basic

The story so far...

Anywhere that you can use a number as an operand – the 2 in MODE 2 for example – you can use a variable instead.

A variable is a letter or word which represents a number. You set the value of variable – the number which it represents, in other words – with an assignment command. For example, a=2 assigns the value 2 to the variable a. From then on, you can use the letter a to mean the number 2. Thus a=2:MODE a tells Arnold to change to mode 2.

To change the meaning of a command you alter the value of a variable. If you type a=1:MODE a:a=2:MODE a the first pair of statements mean MODE 1 because a has a value of 1, and the second pair mean MODE 2 because a now has a value of 2.

With loops you can perform the same command several times. Using loops and variables together you can make the same command do several different things, one after the other.

Now read on...

We rounded off last time with a program that used the new commands FOR and NEXT. We saw there that these were powerful commands, but we didn't see precisely what they did. We're going to find that out right now – with a little help from one of the first commands you learned.

Printing variables

Right back in *Absolute Beginners* Part 1 we saw how PRINT could be used to display test on screen. In fact, PRINT can do a lot more than that. Try typing in these immediate commands:

```
a=593
PRINT "a"
PRINT a
```

You should find that the first PRINT produces the letter a while the second produces the number 593 – the value of the variable a. The difference between the two is just a matter of punctuation.

The first has quotation marks that tell the computer that a is a piece of text to be printed.

The second, on the other hand, has no quotation marks. Because of this, your Amstrad assumes you're trying to PRINT the value of the variable a. You previously assigned the value of 593 to a so that's what your CPC displays on screen.

FOR NEXT LOOPS

That may have seemed a bit of a diversion but, believe me, it was necessary. PRINT is vital to monitoring what happens to the value of a variable, and we'll need to do a fair bit of PRINTing to understand the FOR and NEXT commands.

Let's start off with a simple program which just prints a message repeatedly:

```
10 FOR a = 1 TO 5
20 PRINT "line 20"
30 NEXT a
```

Lines 10 and 30 together make the computer perform the PRINT command in line 20 not once but five times. RUN the program to see this for yourself. Then add to it by typing in the new lines so that it looks like this:

```
5 PRINT "line 5"
10 FOR a = 1 TO 5
15 PRINT "Line 15"
20 PRINT "Line 20"
25 PRINT "Line 25"
30 NEXT a
35 PRINT "Line 35"
```

Now RUN this. YOu should find you get a series of messages, each of them referring to the line that PRINTs it. Thus if you get the message line 25 on the screen you know your machine has just performed the command in line 25. In practice the CPC does this sort of thing very fast, so you won't have time to think about each line as it pops up on the screen. That doesn't really matter. We are interested in the order the lines are performed in, and the number of times they are repeated.

Okay, you've got a whole series of messages on the screen. Let's take a look first of all at which messages crop up more than once. You should have only one line 5 message and similarly only one LIne 35. The middle three, however, each occur five times. They're not just in any old order, either. They come in five groups of three, each one like this:

```
Line 15
Line 20
Line 25
```

That is, they're in numerical order within these groups. Can you see yet what FOR and NEXT are doing here?

Look back to the listing and notice that the repeated lines are the ones between the FOR command in line 10 and the NEXT command in line 30. The combined effect of the FOR and the NEXT is to make your Amstrad repeatedly run through the lines in between them.

As you may remember from the last time, this repetition is called looping. The FOR and NEXT commands and the lines between them form what's called a loop – that is, a bit of the program which gets repeated. For obvious reasons this kind of loop is usually called a FOR-NEXT loop, and it is used almost incessantly by Basic programmers.

Entropy

Storage areas are called variables for the simple reason that they *vary*. This is important. You can assign and reassign them, constantly changing their values while running them through changing processes.

Without variables computers would be so limited they could do little more a piece of paper and a pen. Variables, storage, comparative decision making, input and output – without these your Amstrad would not be a computer.

It's all very well me showing you how FOR and NEXT can make a part of your program repeat itself, but you also need to know what controls the number of times it repeats.

Scrap the old program using NEW and type this one in its place:

```
10 CLS
20 FOR A=1 to 10
30 PRINT 'HELLO'
40 NEXT A
```

When you run this you get the word 'Hello' appearing on your screen ten times. Clearly line 30 is repeated ten times, so that's the number of times your CPC goes through the loop. Change line 20 to read

```
20 FOR A=1 TO 5
```

Now you should get the message five times. To get a further insight into the way these commands operate try running the program again with line 20 as follows:

```
20 FOR A-2 TO 5
```

Next month we take a further look into the uses and potential of FOR NEXT loops.

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At Silica Shop, we have a dedicated service department of seven full time Atari trained technical staff. This team is totally dedicated to servicing Atari computer products. Their accumulated knowledge, skill and experience makes them second to none in their field. You can be sure that any work carried out by them is of the highest standard. A standard of servicing which we believe you will find **ONLY FROM SILICA**. In addition to providing full servicing facilities for Atari ST computers (both in and out of warranty), our team is also able to offer memory and modulator upgrades to ST computers.

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The joy of hacking

Writers write, taxi drivers drive taxis, typists type. And hackers hack. But what does 'hack' mean? Pat McDonald shines a light on a world shrouded in ignorance.

Hackers wear dark glasses and black suits and break into computer systems to steal money. Everyone knows that. This may be an exaggeration of the common view of the hacker – a symbol of power in a technical age – but the image is of such people as lone teenage boffin-vandals.

Hackers have only themselves to blame – those interviews where a human silhouette offers pronouncements laced with jargon to an interrogator who doesn't understand a word. The alleged reason for this dramatisation is that hacking is a criminal activity. In fact there is no legislation covering hacking at all.

But surely hackers can be prosecuted under existing laws relating to copyright or intellectual property rights? Legal experts, as is their wont, have equivocated and disagreed. No legal precedent was established until the Lords gave judgment on one or two minor points.

System architecture

No, not a monologue on Corbusier *(That's enough architecture jokes – ed.)*. The hardware requirements and layout of a system are known as its architecture. This can determine just how much hacking activity is directed at any one type of computer. For instance some business systems have chips which encode information within the machine, making hacking, to put it mildly, rather more difficult.

At the other end of the scale it is vital to have the power switch in a convenient location. If it's in an obscure position you probably won't bother with it, using a soft reset instead.

So? So the Amiga computer took this approach, and as the architecture dictated a lot of disk swapping (regrettably), it was only a matter of time before hackers struck. Viruses appeared which copied themselves into the machine, and then onto any fresh disks that were inserted. After a predetermined time, they crashed the machine – very nasty.

Such behaviour has not helped hackers gain a respectable name, of course. But bear in mind that such programs depend on soft targets. Had the manufacturers altered the design, rendering it more secure from damaging programming, the problem would have been reduced, if not eliminated.

The CPC doesn't suffer such problems, fortunately, though I daresay the point wasn't very high on Amstrad's design criteria.

The only law that can be enforced with any certainty, believe it or not, is theft of electricity. A link is made to a target computer: the computer needs more electricity from the mains. It's rather an underhand way of attempting to stamp out hacking – like prosecuting someone for criminal damage when a window is broken in the course of a bank haul – but it's a start. (This is not as bizarre as it seems: time and again the law has failed to take account of computers: it transpired, for instance, that computer games are not covered by the Video Recordings Act 1984.)

The truth

It's for reasons such as this that a whole hacking mythology has grown up. But what is the truth? Hackers have two real aims. One is the exploration of computer systems. Not that they're interested in hardware (the physical contents) or software (programs), but in the way both interact with internal data. Of lesser interest, but still covered by the term, is the exploitation of computers by individuals for their own purposes.

The motive should be familiar to most computer enthusiasts. Remember the first time you saw a computer in operation? Didn't you yearn to play about with it, to see what you could make it do? Hackers have that same urge but to a much greater degree. To them computers represent new territory to map. Each time a manufacturer incorporates something novel or a programmer produces a new protection program, the hackers smile, sit down and proceed with their pastime.

The happy hacker

Hackers, then, uncover information from within the innards of computers in whatever ways they can find to do so. Some specialise in disk and tape protection systems, others are interested in program alteration and improvements, and others again are just eager to learn a particular technique or language unavailable to them.

The image that really captures the public imagination is the telephone hacker. These people use a conventional phone line, the hardware to connect it to their computer (a modem and perhaps an RS232 interface) and some software to control it.

Dialling computers with this equipment they hack remotely. For some reason this appears more glamorous to many people: in reality it is much more limited. Physical access to a computer means that the protection can be attacked from different angles, while modem hackers are limited to a machine's serial ports.

Of course, the increased difficulty simply makes the challenge more tempting and the victory greater. Hackers have only one real outstanding virtue – determination. Or if you see it as a vice – stubborness.

Hacking tools

- *Your fingers.* Gary is consistently amazed at how people find cheats for games by typing obscure combinations on the keyboard. Often these have been put in by a programmer to test out a game, and left there by oversight. A variation is to type in a keyword to the highscore table. This often generates strange effects, not always beneficial.
- *A protection buster* (£10-15). Goldmark Systems produced a good deal of software to get around various protection formats. The argument against such programs is that people who use them are potential pirates. Furthermore pokes discovered with them can't be transferred easily to other versions. Nevertheless they are useful to the beginner.
- *A hardware imager* (£40-50). There are now a few different devices on the market. (The one with the highest backup specification is Romantic Robot's *Multi-face II+*). These devices break into programs at the touch of a button. Once in it is a relatively simple task to come up with a poke.
- *Knowledge of machine code.* There is no substitute for an understanding of how the machine works.
- *A disassembler* (£20+). This is a program for taking raw machine code and displaying it in assembly language form for easier understanding.
- *Machine code Reference* books. See this month's book reviews.
- *The Hacker's Handbook III*, by Hugo Cornwall (ISBN-0-7126-1147-9), published by Century Hutchinson Ltd at £6.95: for anyone who wants to learn more. Although not CPC specific it nonetheless contains a good selection of anecdotes and advice.
- And last but by no means least, a tutorial book to get you started.

The Phil Howard connection

Remember *'Cheat Mode* Champ', Phil Howard, whose contributions filled the entire feature in *AA33*? Well, who better to ask about the activities of a hacker?

> 'I'm only interested in going through code and finding out how it works. The kids like playing games, but I'm no fan.'

Phil's married with kids and works in a textile factory as a shift dyer. He's 36 years old and doesn't wear dark sunglasses – so much for the popular image of the lone teenage hacker!

When did you start programming?

My first computer was a ZX81. I suppose quite a number of people started computing with that. Starting off with Basic, I gradually got into machine code. That was about seven years ago.'

When did you first break a protection system?

'I bought the CPC464 when it first came out. That must be about four years ago now. Anyway, when I was playing around with it I discovered how to crack open Basic protected programs. It all started there, really.'

How about your first cheat?

'My first, that's difficult to answer... In the old days of course, there was no protection on games, or at least nothing I couldn't handle. The one that stands out was when a friend wanted a poke for *Jet Set Willy*. That was my first contact with the Speedlock protection system. I had to go through that first, which was more of a challenge.'

And afterwards?

'I gave him the poked game back. That must have been about two years ago now. I'm only interested in going through code and finding out how it works. The kids like playing, but I'm no fan.'

Is there any protection system that you can't crack?

'Gremlin Graphics is giving me a lot of trouble. Recently I've not spent much time on my hobby, but even so it is fairly tough. I reckon I'll do it eventually if I just sit down and try for a week, maybe a month.'



What equipment do you use?

'My 464 and Devpac. Devpac is probably way out of date now, but I'm used to it. A friend comes round with his disk drive if I need it, and I'm thinking about buying a 6128.'

You mean to say you don't have any other gadgets to help you?

> 'The only way to learn advanced machine code is by delving into existing products.'

'What for? Oh, I have lots of different programs. But I wrote them all myself, for the different protection routines. Some of the early ones, well, I can't remember how they work any more. These are not saleable. They're user unfriendly and have little quirks. But I can use them, so they're good enough for me.'

And just why do you crack games?

'For education. I want to know just how things work. My own personal feeling is that software houses, by protecting games, are slowing down software development. 14 and 15 year olds can't learn techniques from books. The only way to learn advanced machine code is by delving into existing products.

'At the moment every programmer does things differently. There are a hundred ways to write a program, and I think there should be some sort of apprenticeship for new programmers. If that happened, then I believe that the industry capacity for producing software would leap.'

Is your hobby lucrative?

(Laughs) 'Well, I get free games from *Cheat Mode!* That's all. Apart from a great deal of satisfaction it's not lucrative at all.'

Hack the CPC

How much hacking occurs which is Amstrad orientated? I firmly believe that the most popular form of hacking on the CPC is *Cheat Mode*. Pokes for games are not only useful but, in hacking terms, easy to find.

The problem with this occupation is that generally some kind of protection must be beaten somehow to get at the code. Rather than do it themselves, some people use a hardware or software tool to do the job.

Do it yourself

Back in *AA30 Type-Ins* featured a program by Martin Schroeder called Hacker. The interest and enquiries it generated prove that computer users of all types are fascinated by the subject, and would dearly like to become involved in some way. Here, then, is an extended guide to using Schroeder's Hacker.

It is important to understand right away, however, that the program does not remove any protection from a game. All it does is find infinite lives for games. So first you must remove a game's protection – indeed, Elite don't bother to put it on anymore, so their games are a good starting point.

Run Hacker and load the main code for the game. Hacker should come up with one or two pokes: make a note of these.

Now the tricky bit. You may well have to do some programming here. Your program has to do the following: first, load in the main game code.

Next, put in the poke. Then use a CALL statement to run the game.

An example:

```
10 OPENOUT 'D':MEMORY 799:CLOSEOUT
20 ' This line lowers memory to make way for code.
30 LOAD 'maincode',LLLL
40 ' Use the filename for the game code. LLLL should be
50 ' set to and the correct loading address.
60 POKE HHHH,BB
70 ' This poke should be the same as one of Hacker's. Test
80 ' each different variation that it comes up with.
90 CALL RRRR
100 ' RRRR should be set to the run address of the game.
110 ' Examine the original loader on the game tape
120 ' which should contain it.
```

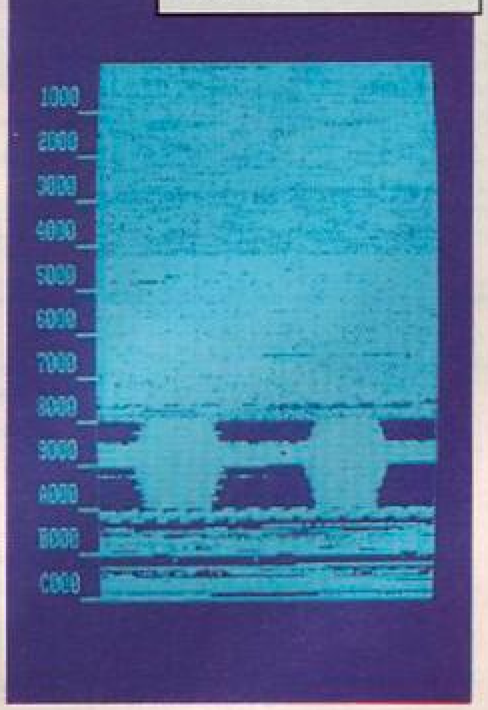
Of course there are those who will object that using a program such as Hacker to do the work for you is not really hacking at all.

In a sense they are quite right, for the real joy of hacking comes when you discover things for yourself.

But using Martin Schroeder's program may persuade the at least some inexperienced computer users that it is quite possible to produce genuine original pokes of your own without being a professional.

Who knows, this could be the start of something big...

■ This is what a game looks like to a hacker...



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FIRST BYTES

Anxious about assembler? Horrified by hexadecimal? Perplexed, perhaps, by low and high byte? Richard Monteiro helps out the novice machine code programmer.

By now you should be reasonably confident of changing between hexadecimal and decimal bases, PEEKing and POKEing, and manipulating memory. If you're still a little hazy, refer back to earlier instalments of the series for a bit of revision.

Still with us? Right, your first byte at appetising assembler will be cooked up very shortly *(get on with it - ed.)*. In the interlude, however, it is best to recap on the Z80 micro processor and how it deals with instructions or commands.

Instructions, which the processor receives from memory – yes, machine code is stored in memory just like Basic programs – tell the Z80 to perform certain actions. These actions can only be performed on memory or the processor's internal registers (fast on-board RAM if you like). Typical commands might inform the processor to add one number to another, place a value in a memory location, retrieve a value from a memory location, jump to a particular area of memory or logical AND a number with another.

They sound like operations that can be performed in Basic? You're right, they can. In fact there are very few assembler instructions that can't be imitated from Basic. So why bother with assembler? In a word, speed. Machine code programs can run anything from a few times faster to hundreds of times faster than the Basic equivalent. Make that two words, speed and flexibility. Any part of the computer is accessible from machine code. Sorry, make that three words...

The processor has several eight-bit registers (or stores that can hold any value up to 255). These are called – for no particular reason – A, B, C, D, E, H, L. There are others, but they have specialised tasks and are therefore best left alone at present. The main group of registers, or general purpose registers, are the ones you use most often to store numbers and perform arithmetic and logic calculations.

Some of the registers can be paired to create 16-bit registers. These paired registers – BC, DE, HL – can be used for storing values up to 65535 (or FFFF in hex). The advantage of this may not be immediately obvious, but if you remember in an earlier issue we explained that each memory location has a number assigned to it (analogous to houses in a street) starting from zero and incrementing by one. As the CPC has 64k (64x1024 bytes) of RAM, memory locations number 0 to 65535. By using a 16-bit register it is possible to address the spectrum of memory locations.

Intermediate bytes

From Basic, how would you go about assigning a value to a variable? Simply by entering the command LET A=8 (LET is archaic and not strictly necessary, but serves to show the similarity between assembler and Basic syntax). The same is possible from assembler: LD A,8. The term LD can be thought of as a glorified LET command – it's actually short for LOAD.

Translated, the line LD A,8 means LOAD the A register with the value of eight, LET the A register equal eight or place the value eight in the A register. Each is correct. Choose a translation that is easiest for you to remember. Note that you can't type LD A,8 at the Basic prompt: you get a Syntax error if you try. What you need, eventually, is an assembler. For now though, try to learn as much of the syntax as possible. In forthcoming months we going to recommend assemblers – and maybe even print one in *Type-Ins*. In the meantime, though, keep absorbing the information.

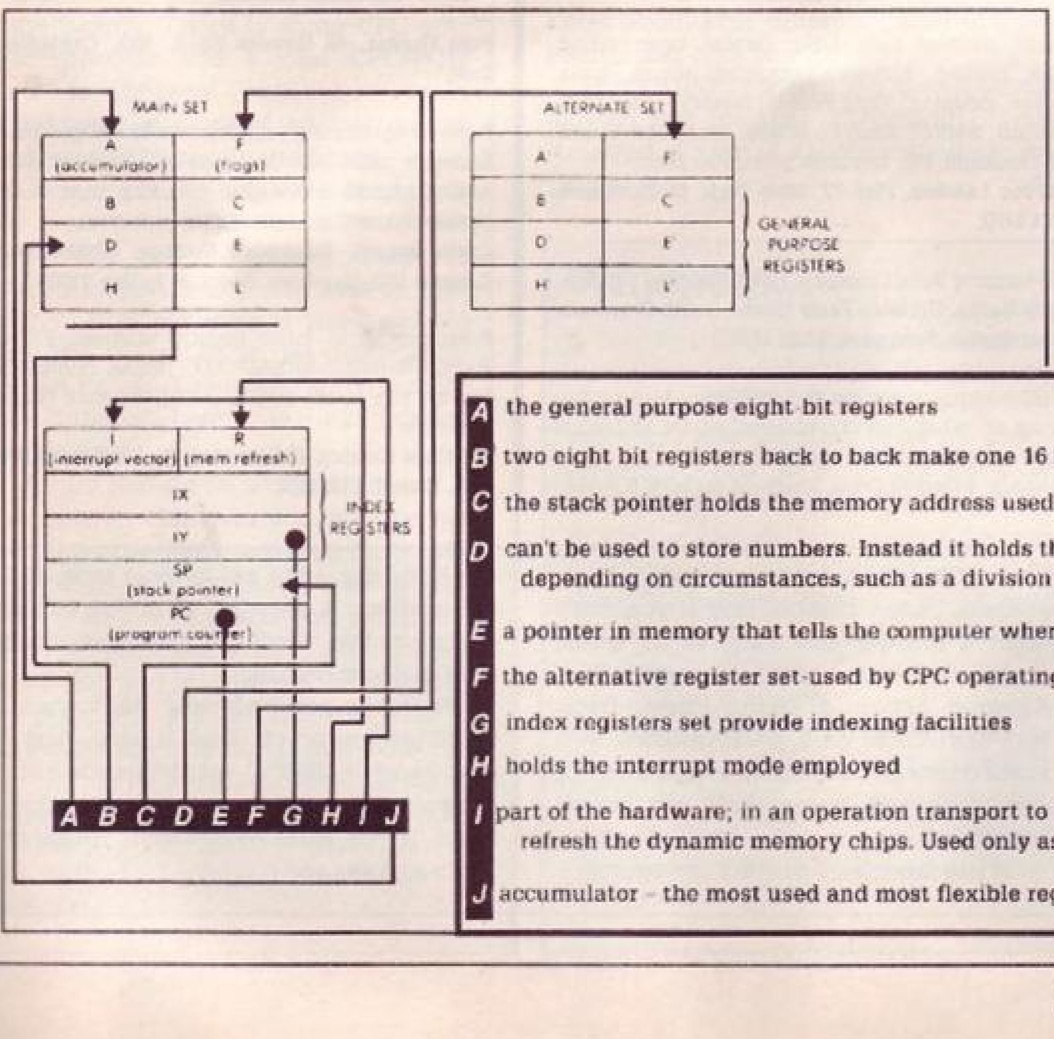
The A in the expression LD A,8 can be exchanged for any other general purpose register (eight-bit or 16-bit). The same is true for the number, which can be changed to another value. The following are all acceptable:

```
LD C,23    LD H,0     LD E,201
LD BC,6    LD HL,175  LD DE,94
```

Try to work out which of the following are acceptable, which are not and why. Answers next month.

```
LD A,34    LD D,267   LD S,23
LD BC,2523 LD DE,76553 LD HL,7
```

Hackers is on holiday



A the general purpose eight-bit registers

B two eight bit registers back to back make one 16 bit register

C the stack pointer holds the memory address used for storage

D can't be used to store numbers. Instead it holds the results of flags that are either set or reset depending on circumstances, such as a division by zero, a carry or an overflow

E a pointer in memory that tells the computer where the next machine code instruction is to be fetched from

F the alternative register set-used by CPC operating system

G index registers set provide indexing facilities

H holds the interrupt mode employed

I part of the hardware; in an operation transport to you, the central processing unit puts out a signal to refresh the dynamic memory chips. Used only as a random number generator and a protection system

J accumulator – the most used and most flexible register

HELPLINE

Where eager Amstrad experts offer assistance

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Iain McKinnon, 37 Loch Laidon St, Sandyhills Estate, Glasgow, G32 9HR

Grand Prix Simulator, Who Dares Wins 2, Speed King, Paperboy etc. plus pokes, maps, trillions of programs and help with Basic and machine code.
Steven Flynn, 76 Dunlop Rd, Tilbury, Essex RM18 7AU

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Paul Scott, 13 Kiln Crescent, Bishop Middleham, Co Durham DL17 9AP

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Stephen Trimmer, 24 Vale Rd, Broadstairs, Kent CT10 2JQ ☎ (0843) 603258

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Michael Dickinson, 281 Tyldesley Road, Atherton, M29 9AL

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Solving Basic bug, most machine code programs. Enclose listing + description of program +) If poss enclose cassette with program on 464 only. If machine code enclose assembler listing.
Paul Jones, 78 Fitzwilliam Street, Swinton, Rotherham, S.Yorkshire, S64 8RW

Converting programs for the Vortex disk drive. Simple machine code. Hacking. CP/M programs & utilities. A whole bunch of public domain programs.
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Radzone, Ghosts and Goblins, Knight Tyme, Dragons Lair, Green Beret, Gauntlet, Feud, Starquake (codes), Bounder, Boggit.
David Brooke, 8 Birkby Grove, Bilton Grange, Hull, HU9 4PZ

Knight Tyme, Spellbound, machine code, Basic, Word Perfect, Melbourne Draw, GAC, pokes, maps, hacking, DMP 2000 problems, games development using GAC, word-processing, graphics (screen dumps), all CPC games. Can also print program listings for a 40p postal order. How to do pokes and problems using modems. (I have a Voyager 7)
Guy Sicka, 78 Chesterfield Road, High Barnet, Herts, EN5 2RF. ☎ (01) 441 5612

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GAC adventure writing and problems. Also conversions to other formats undertaken for published GAC authors by fellow established author.
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Bombjack, Green Beret, Doomdarks Revenge, Lords of Midnight, Thrust, Barbarian, Kung Fu Master, Elite, Hunchback, Feud, Everyone's a Wally, Who Dares Wins 2, Grand Prix Simulator, Kane, Hyperbowl, Ikari Warriors, Fist, Yie Ar Kung Fu, Bruce Lee, Jack the Nipper, Fourth Protocol (part one only), Knight Tyme, Ghsot n' Goblins.
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Pal Kroger, Bergjevegen 62, N-4056 Tanager, Norway

Mini Office I (program that removes all bugs, send SAE), business program (word processor, spreadsheet, graph display etc.) written by myself, send cass or disk and SAE, Deflektor, Gauntlet II, Matchday II.
Paul Graves, 46 Queens Road, Ash, Canterbury, Kent

Basic programming, machine code programming, firmware calls, Amsdos calls + accessing them, adding second drives (3in + 5.25in), tape loading problems, multiface two, printer problems.
Kevin Bryant, Jessamine Cottage, Chapel Lane, Ashford Hill, Newbury, Berks. ☎ Tadley 71792

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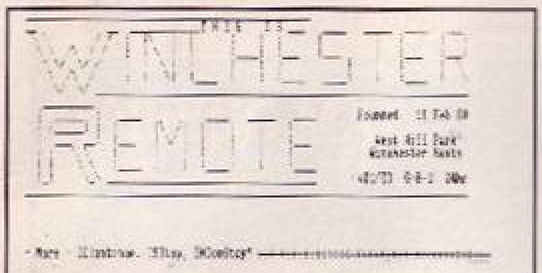
Feeling helpful? Just send your name, address, phone number (say if you don't want it printed) and subjects on which you're offering help to: *Helpline*, Amstrad Action, 4 Queen Street, Bath, BA1 1EJ. Write on a postcard/back of a stuck down envelope and keep it short or you won't get in (or you'll get cut to 'loadsagames').

If you want help contact the appropriate Helpliner – not us. By post include a self-addressed, stamped envelope for the reply – or you won't get one. And phone only in decent hours!

Piracy is not welcome: don't try it, you'll get booted off. Keep it legal. And if you receive SAE's, for heaven's sake return them with some acknowledgement. If you want to come off *Helpline* write and say so.

COMMING ON-LINE

Our monthly expose of the Comms world



● Winchester Remote on sign up.

Winchester Remote

☎ 0962 69322, 300/300 1200/75
8 data, no parity, 1 stop
Sysop: Mike Fudge
Mailbox Pat McDonald as:
Patrick Mcdonald *(note spelling)*

Winchester ROS was, until recently, run on a CPC and it cannot be denied that the quality was a bit variable (=naff). Now, however, sections are much easier to get to and appreciate.

Because it's so new the actual facilities available are not as extensive as some boards. There is some CPC specific software and a joint CPC/PCW area to browse over, but really *Winchester* is more of an information exchange than a software libray.

Downloads are available as soon as you have been verified. As I said, the documents and information files are what the service is really best at. The original ROS software is still available from the sysop, as is the documentation for its use. Uploading software into the bulletin board is, as normal, encouraged.

A rare feature on a bulletin board is the register. That way you can find out just who is on the board, and can easily communicate through it. Due to this facility the use of real names is encouraged. A gratuitous quote is updated every day, and is supplied automatically when you log on:'You can lead a horse to water. Make him roll over and you've got something'. Well, it made the editor chuckle.

Not one for dynamic users, but a few contacts cultivated here could be of real value.

On the waterfront

Within the past week or so we've heard about price increases for Micronet, British Telecom's viewdata service for microcomputers. Now rather than issue blanket statements about what is, after all, a huge service, we are going to wait until we've had a look at just what is on Micronet for CPC's. Value for money is relative, after all. Even as I write the application form is crawling towards Durrant House, so stay tuned for an in-depth report.

Design changes

Apologies to Mike Taylor: we forgot to identify him as the system operator of *Leconfield*. (If anyone knows who runs *Gnome at home*, please inform me – just for the record.)

Rather than just depend on snail mail we now print mailbox addresses on bulletin boards and services reviewed. Let us know about your problems, answers, new boards and criticism.

If it's CPC related then get your mail moving fast towards: *Comming On-line, Amstrad Action*, 4 Queens St, Bath BA1 1EJ.

Whispers...

■ We're trying to encourage readers to indicate whether their *Type-Ins* are to be placed in the Public Domain. So if you want your program to be the property of all (i.e. anyone can have as many copies as they want) then say so.

■ On the comms front, public domain offerings are still widely available through bulletin boards. So if you declare that your program can go into the public domain, expect to see it around a lot of places.

■ Finally, we've just heard about a new company offering CPC – not just CPM! – Public Domain software. They're called DW Software and we hope to review a utilities disk of theirs next month.

Lap Of the Gods

☎ 01 994 9119, 300/300 1200/75
7 data, even parity, 1 stop
System Operator: Tiger Tiger
Mailbox Pat McDonald as:
Lancewood

I must confess that strictly speaking there isn't much to do with the CPC on this board. Nevertheless I reckon that it will prove of interest to readers, for a couple of reasons.

For a start, it is based around a multi user game. Now although regular comms enthusiasts will appreciate a bald statement like that, this column is designed to inform the average reader. So a MUG is like a conventional adventure game. You control an alter ego within a series of locations. You must perform certain tasks to progress in the game.

The big differences are that, because the game is generally run on a large computer with lots of disk space, it is much more extensive than CPC adventure games. The main selling point of MUG's though, is that more than one player can participate at once. So rather than facing a logical computer opponent, you have to contend with the subtleties and weirdness generated by human players. Mailbox facilities are available too, to let players chat outside the game.



● These people are *weird*.

Anyone can dial up and play *Gods* using a guest facility. To appreciate the game fully though you need to register. £11.50 buys you either unlimited play for a month or twenty full hours, which are saved until used. The price includes VAT. Contact:' Lap of the gods Ltd', Voysey House, Barley Mow Passage, London W4 4PT.

Within the board are several special interest areas, including one for – of all things – comics. One thing you won't find is a software upload/download area. That notwithstanding, *Gods* has a very open, relaxed atmosphere that contrasts sharply with some 'computer only' based services. And as you may have worked out from the contact name, handles are allowed.

S.D.C.

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ACTION TEST

Target Renegade, this month's *Mastergame*, is a rare case of a follow-up improving on its predecessor.

Raves are still thin on the ground, with *Arctic Fox* the only one. *Vixen* continues the vulpine connection and uses the same subtle marketing techniques of *Barbarian*, featuring a Page Three girl on the cover. Finally there's *Hopping Mad*, a ball bouncing game of balloon catching.

Action Test Index

HOPPING MAD

Elite ● £9.99 cass, £14.99 disk
joystick/keys

You're the second to take on the challenge of reaching outer space by guiding your four balls safely across level after level of terrain. Balls can be burst when they hit something sharp and so you have to bounce carefully en route to the stars.

On screen you have a horizontally scrolling playing area filled with ground- and air-based objects that do you no good at all when you hit them. Above the playing area is your score, lives, level, number of balloons collected and time remaining. The playing area shows a line of four bouncing balls that have to be guided across the landscape.

SECOND OPINION

"I found this quite difficult to get going on. Bouncing a ball along is not as mindless or as simple an occupation as it may sound, and at times I must confess I got quite breathless with excitement. Incidentally, I wonder why this game scrolls from right to left? A real novelty that.

Not an Elite classic, but it'll do until something better comes along, I suppose."
SC

GREEN SCREEN: No problems.

To move from one level to another you have to collect ten of the balloons that float around in the sky by bumping into them. Apples sit in trees and bonus points are earned by picking them up. To hamper your progress, however, there are lots of spikey things that burst balls.

●Watch out for the cacti on the beaches



Lose all four balls and you lose a life, and the game ends when you're out of lives. The spikey things come in two varieties: flying and ground-based. The flying ones are birds and bees that move up and down the screen trying to puncture you. Ground based spikes include hedgehogs and ball eating plants. Little worms slither around too and can be squashed for bonus points (shame). Plants can be squashed too if you hit them on a non-sharp part. If you get ten balloons you get to go to the seaside. The seaside is similar to the forest, except you get different spikeys and there are more of them to make life tougher. Further levels are simply more of the same.

What we have here, folks, is another game ported from one machine to another with few changes to the code. It's a pity because there's potential for some very pretty background graphics – and the sprites could be more colourful too. The CPC is being treated as a second class machine. When are software houses going to exploit each machine's strengths rather than developing on one machine and converting as cheaply as possible to others?



●Six balloons have been collected as the seventh heads your way

There's a happy and cheery little tune that plays on the title screen, but once you're into the game it's just a series of boings and pings.

Still, guiding four balls over the scrolling landscape is not as simple as it sounds, and there are times when you avoid a spike by the merest pixel: choosing your speed and height of bounce means the difference between life and death.

Hopping Mad may not have the greatest graphics and sound ever, but it is original and reasonably addictive. **GBH**

The Verdict

GRAPHICS 58%
- □ Smooth horizontal scrolling.
- ■ Poor use of colour.

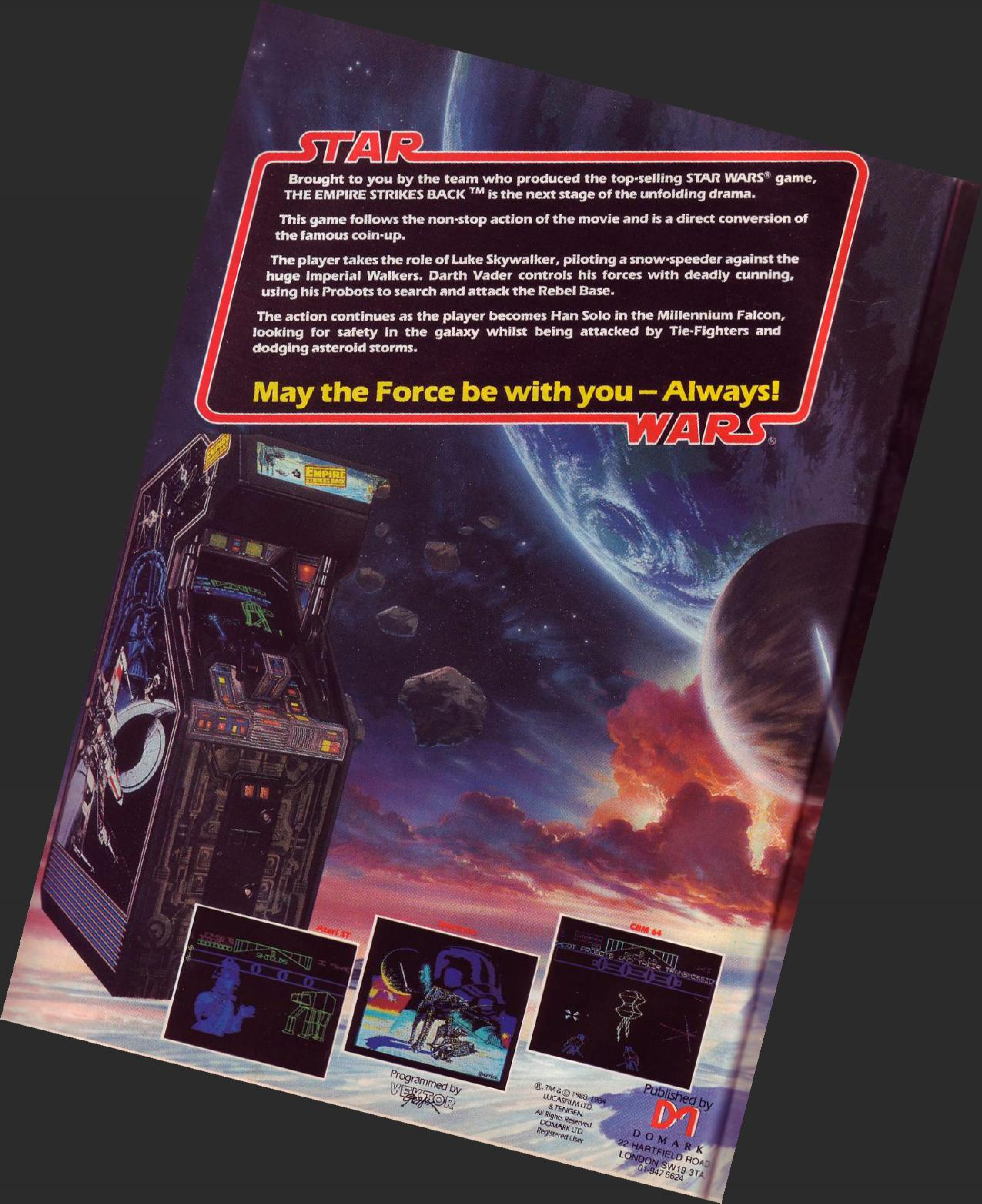
SONICS 48%
- □ Nice title tune.
- ■ Pity about the sound effects.

GRAB FACTOR 65%
- □ Simple idea, just bounce along and collect balloons.
- ■ Difficult to stay alive for long in your first few games.

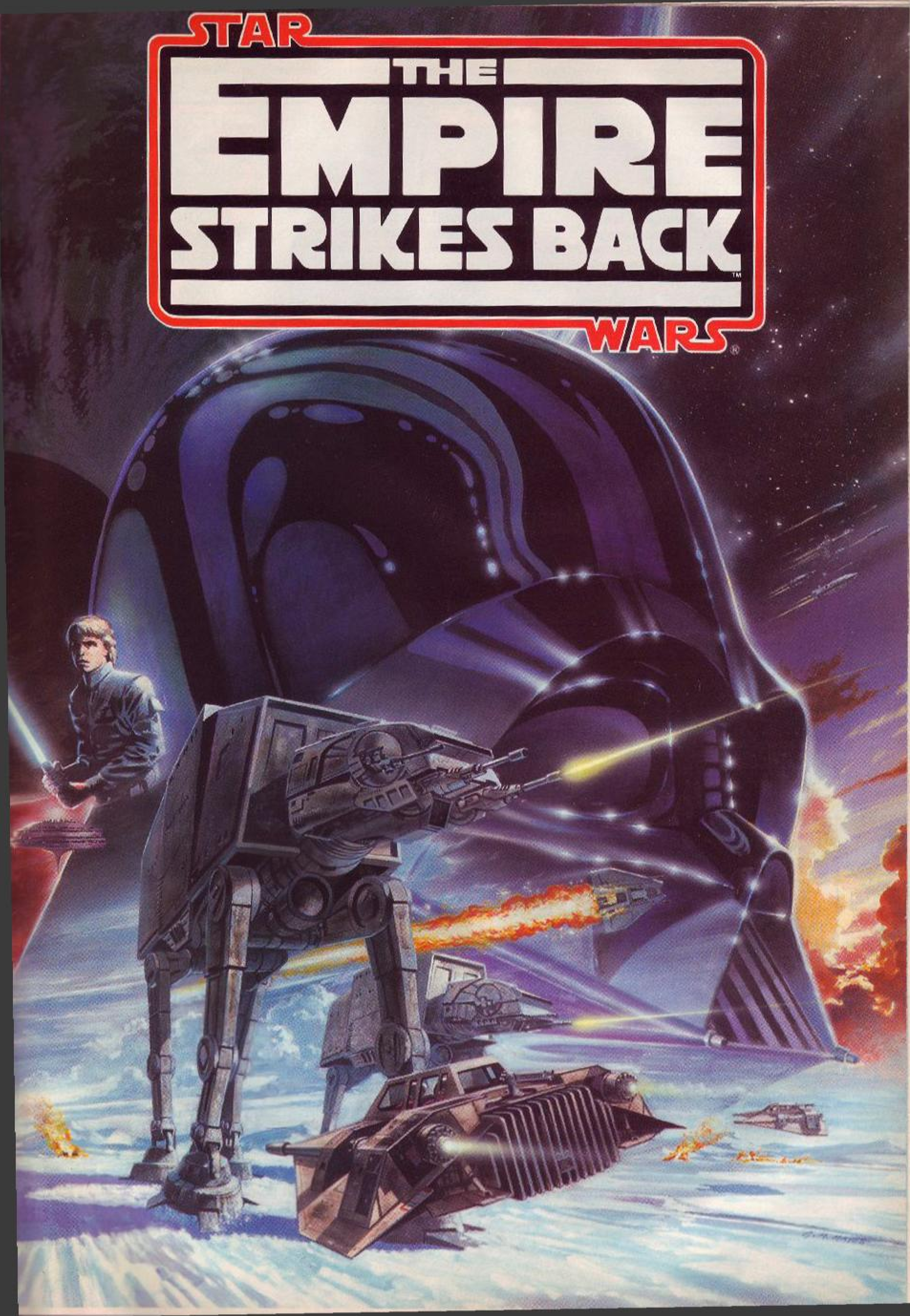
STAYING POWER 58%
- □ Precision ball bouncing is soon second nature.
- ■ Every level is basically the same.

AA RATING 62%
- □ An original idea well executed.

FIRST DAY TARGET
Complete level two



STAR
Brought to you by the team who produced the top-selling STAR WARS® game, THE EMPIRE STRIKES BACK ™ is the next stage of the unfolding drama.
This game follows the non-stop action of the movie and is a direct conversion of the famous coin-up.
The player takes the role of Luke Skywalker, piloting a snow-speeder against the huge Imperial Walkers. Darth Vader controls his forces with deadly cunning, using his Probots to search and attack the Rebel Base.
The action continues as the player becomes Han Solo in the Millennium Falcon, looking for safety in the galaxy whilst being attacked by Tie-Fighters and dodging asteroid storms.
May the Force be with you – Always!
WARS®
EMPIRE STRIKES BACK
Atari ST
CBM 64
Programmed by VEKTOR Grafix
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22 HARTFIELD ROAD
LONDON SW19 3TA
01-947 5624


STAR
THE
EMPIRE
STRIKES BACK
WARS

TARGET RENEGADE

Imagine ● £8.95 cass, £14.95 disk joystick/keys

Revenge is the motive in this sequel to *Renegade*. Your brother Matt was hot on the trail of the evil Mr Big and managed to learn plenty. In the process, however, he was captured and executed. Now you want to get even – an eye for an eye, a tooth for a tooth, vengeance is mine and so on. In other words, as in all those *Death Wish* films, a spoonful of gore helps the gratuitous violence go down.



Player one pummels a girl's head in

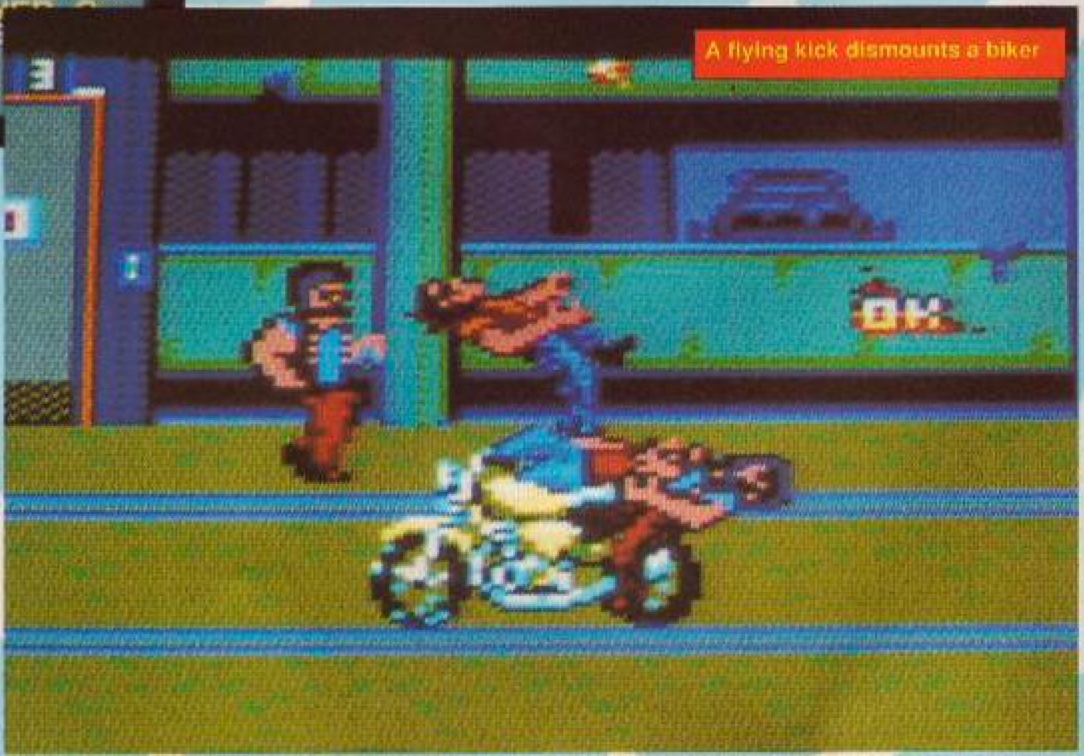
There's one major difference between this game and its predecessor, however, namely simultaneous two player action. (You can of course still play solo.) Otherwise things look pretty similar, with a large flick-screen playing area and a panel at the bottom of the screen for each player indicating health, score, time and number of lives remaining. You begin with three lives, but in the first few games you lose them very quickly. Bonus lives are awarded at 50,000 points and every 100,000 thereafter. When time runs out you lose a life and the clock is reset – if you have any lives left, that is.

There are five scenes in all, each occupying several screens. The gangs of thugs vary from scene to scene and as you'd expect become increasingly unreasonable and difficult to deal with. The first scene is a multi-storey car park where the motorcycle gang hangs out. You begin on the upper level and must reach street level within the time limit. There are two sorts of opponent: bikers and pedestrians. The former must be unsaddled before you can beat them to pulp, the latter you can pulverise right from the outset. Some gang members are armed with a sledgehammer, but if you manage to knock it out of their hands you can use it to crush their skulls. Unfortunately you lose the hammer at the end of the level.

Scene two is the 'Seedy Street at Night' where you encounter the 'ladies of the night'. They too, like everyone else, are after your blood and they too, like everyone else, have to be beaten to death: do unto others before they do it unto you. Some carry chains which, like the hammer, can be used to bludgeon the girls. They have a gun-toting boss: if he hits you you lose a life immediately. His supply of ammunition, fortunately, is limited and after he runs out it's down to hand to hand combat again. The boss also has a habit of hitting his girls and killing them. Not a nice chap to work for.

The park is the next stage where you come across a bunch of skinheads, again after your blood. (Don't you have *any* friends?) Some of the gang head-butt you and others use a club to brain you. Scene four is the shopping mall where the Beastie Boys and their dogs loiter with intent to kill (how did you guess?). When you finally battle your way to the end of the level you get to visit the bar, occupied by Mr Big's bodyguards. Get past them and it's time to wreak revenge on the big guy himself.

In *Renegade* you played two handed, one for movement and the other to


A flying kick dismounts a biker

'Excuse me, would you care to be in our club – or would you perhaps prefer our club to be in you?' ▼



SECOND OPINION

"It's strange to see just how compelling the two player option can be. Working as a team is much more rewarding than solo play. I'd like to see many more games with that attraction.

On the minus side, Target Renegade *is simply a spiced up punch-'n'-kick game.*

It is to be hoped that programmers will include new features and add more." **PbM**

GREEN SCREEN: No problems

ASTER GAME



attack. This was inevitably a little awkward until you had had some practice and mastered the technique. In this sequel, however, the controls have been simplified so that you only have one attack key. All the old tricks have been left in, such as being able to beat someone's brains out while they're lying on the floor, though this time round you don't actually get to see blood (red or blue) spurting from heads.

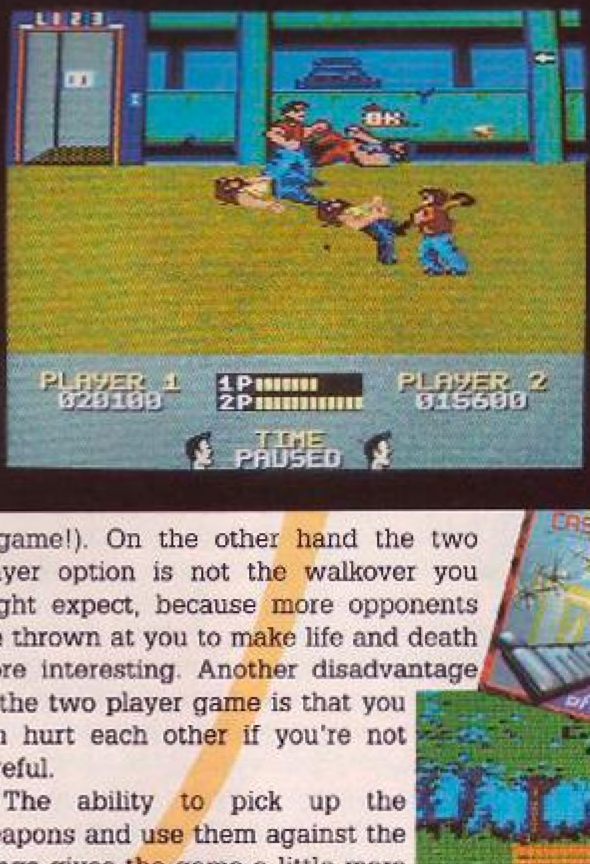
The graphics are just as good as in *Renegade*, with good clear colour and well animated figures. Sound effects are average, and the continuous tune that plays can be turned off if it gets too irritating *(it does -ed.)*.

Apart from the simultaneous two player option *Target Renegade* offers nothing new. That one feature does make a difference, though, because now you can get a friend to join in and have a good time kicking and maiming together (bearing in mind, of course, that it's only a game!). On the other hand the two player option is not the walkover you might expect, because more opponents are thrown at you to make life and death more interesting. Another disadvantage to the two player game is that you can hurt each other if you're not careful.

The ability to pick up the weapons and use them against the gangs gives the game a little more excitement. Completing the levels within the time limit isn't easy, and very often there'll only be a few seconds left on the clock.

After you've seen all the gangs you may lose interest, but until then you'll have plenty of fun with all this gratuitous violence. **GBH**

FIRST DAY TARGET:
Complete level three.



▲ **The boss has a gun, but he doesn't care who he shoots**





▲ **Another renegade bites the dust**

The Verdict

GRAPHICS 87%
- Characters well animated.
- Colourful and detailed graphics.

SONICS 74%
- Atmospheric tune plays constantly.
- Sound effects good too.

GRAB FACTOR 93%
- A very good combat game for one player...
- And even more fun for two.

STAYING POWER 81%
- Five large playing areas to fight through.
- Not quite so enjoyable once you've seen all the gangs.

AA RATING 86%
- Excellent sequel to a very game game.

VIXEN

Martech, ● £9.99 cass, £14.99 disk joystick/keys

Hot on the, er, heels of *Barbarian* and *Sam Fox's Strip Poker* here's yet another game with a page three girl on the cover – this time Corinne Russell. The setting is the planet Granath where dinosaurs still roam the surface of planet and crush the small mammalian life forms that scurry amongst the undergrowth. Only one human is left to fight them.

The screen is split into two areas, a horizontally scrolling playing area at the bottom and a status panel at the top. The status panel shows your score, lives, time and the fox timer. You begin the game with five lives and 100 seconds to reach the end of the level. The fox timer has a fox's head on the scale that moves to the right every time you collect a head. If the time runs out then you lose a life and it's reset.

Play begins with you standing outside a cave entrance, whip in hand. Off you jog to beat those dinosaurs to pulp and reach the end of the level. Your reptilian foes come at you from either side and if they touch you a life is lost. Some are tougher than others and they take a couple of hits to kill. As you charge across the landscape you'll find another hazard that's just as lethal as the dinosaurs: falling down a hole loses you a life.

Objects can be found hanging from trees and sticking up out of the ground. If you whip open the ones hanging from trees you discover a fox's head which can be collected by jumping or walking into it. (The fox timer is important at the end of a level, but more of that later.)

Ground-based objects contain gems, clocks, lives and poison. Life objects fairly obviously gain you a life. Gems score points and clocks give you extra time in which to complete the level.

If you manage to fill the fox timer and complete a level within the time limit then you metamorphose into a fox and enter the underground stage of the game. In this part you have until the fox timer



ARCTICFOX

Electronic Arts ● £8.95 cass, £14.95 disk joystick/keys

AA RAVE

The south pole (shouldn't it be *Antarcticfox?*) has just acquired some new residents, an alien invasion fleet. Oxygen doesn't do them much good and so they decide to convert the Earth's atmosphere to something more hospitable. Unfortunately for the human race, however, alien air is very toxic and some brave soul must go to the Antarctic to destroy the atmosphere converters, together with the aliens. Guess who gets the job.

You command the Arcticfox tank, specifically designed for combat in the frozen wastes. In the upper screen is a 3D vector graphics view of the outside world and around that your instruments. A radar screen sits at the bottom of the display providing information on your surroundings. A compass to the right shows your heading and a digital readout below gives your geographical position. To the left of the external view are three panels indicating the number of mines, missiles and your speed. A clock shows the time, commencing at 0900. Above the view screen is an indicator bar that is green, orange or red.

Before play begins you have the choice of practice or tournament play. The former gets you used to the tank and its abilities, and the latter is the full scale game of alien annihilation. Practice is vital before you're ready to save the world.

Antarctica consists of several different terrain types that alter the movement characteristics of the Arcticfox. Crevices are most dangerous: drive over the edge and you plummet to your death. Tundra slows you down and mudflats cause you to slide a little. Rocks and mountains can't be driven over, but they offer some cover from enemy fire (and cover for the enemy too). Ridges present a higher vantage point from which to blast your enemies.

Your tank is armed with missiles, cannon and mines. Missiles are camera guided, allowing you control after launch. Mines are deposited from the back of your tank and detonate after a time limit – or when something bumps into them (yourself included!). Missiles are more destructive than cannon, but unfortunately they're in short supply and must be used carefully. You have three other options: cannon inclination, dig in, and relative reverse. The first speaks for itself; the second enables you to be part buried beneath the snow, while relative reverse speedily switches you from forward motion to reverse and vice versa.

The alien forces consist of tanks, reconnaissance vehicles, aircraft, rocket

The Verdict

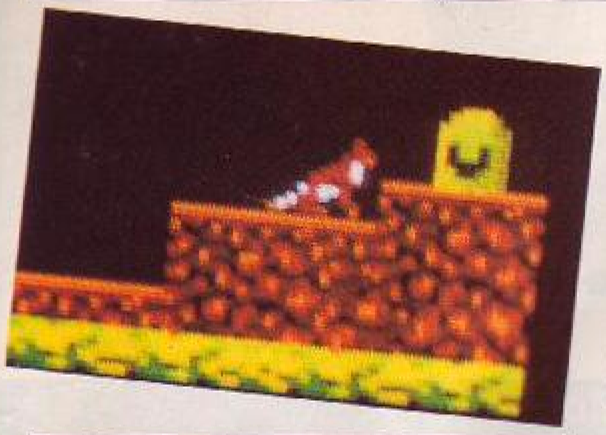
GRAPHICS 74%
- □ Good use of colour to indicate different terrain types.
- □ Smooth movement of the vector graphics.

SONICS 17%
- ■ Simply a series of explosions.

GRAB FACTOR 84%
- □ Very easy to just start blasting those aliens.
- □ The training mode gives you a chance to practice driving and gunnery skills.

STAYING POWER 79%
- □ Destroying the enemy base takes a long time.
- ■ Driving around with nothing to do gets boring.

AA RATING 81%
- □ Good variant on the *Battlezone* theme.



●The fox form in the underground section.

reaches zero to finish the level before you lose a life. This stage is much easier to complete, since the only danger you face are the holes in the floor.

Lots of points can be picked up and so can the megawhip which kills any creature with a single hit. If you lose a life at any stage the megawhip is lost.

The best graphics in the game, it must be admitted, are the digitised loading screen of you-know-who. Vixen and her foes are reasonably animated, and though the fox is a little on the small size it's no worse than the other figures.

The horizontal scrolling of the landscape is not particularly smooth, but at least it is fairly fast. A jungle style tune plays on the title screen, but the in-game effects are limited to mere whipping sounds and pings with a brief tune every time you lose a life.

Original it ain't: there's nothing more to it than you just running around whipping things and collecting objects. The sub-level where you travel in the guise of a fox is far too easy and the main part of game where you're in human form is annoying because you can lose a life in an unavoidable situation. It would have been much better if a balance had been struck between the two extremes.

One thing that it does have is three different play areas on the cassette or disk. It's no more difficult on one level than it is on another, but you do at least get the feeling that you're getting more for your money. **GBH**

FIRST DAY TARGET
SCORE 10,000 points

SECOND OPINION

"Martech have a strange attitude if they think a game will sell because it includes a full colour poster of Corinne Russell.

I don't think Amstrad owners are that simple-minded: when they buy a game they want a game, not a sexist whip-em-up. **PbM**

GREEN SCREEN: So-so

The Verdict

GRAPHICS 69%
- ☐ Digitised loading screen is good.
- ■ Poor horizontal scrolling.

SONICS 59%
- ☐ Atmospheric title tune.
- ■ Feeble in-game effects.

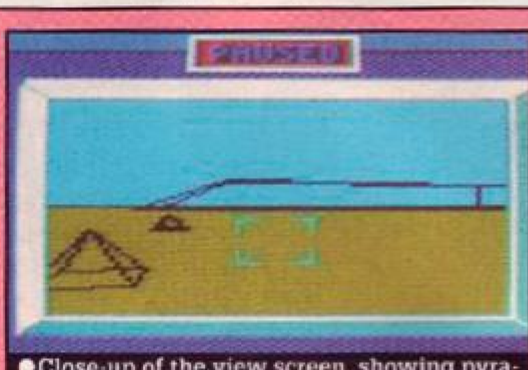
GRAB FACTOR 68%
- ■ Simply a matter of killing anything that moves.
- ■ Too difficult to begin with because of awkward controls.

STAYING POWER 64%
- ☐ Three versions of the game...
- ■ ...but there's very little difference between them.

AA RATING 65%
- ■ A fun game, but it loses out on originality.

---

launchers, radar stations, air converters, communications forts and the main fort. There are two varieties of tanks, light and heavy, the lighter ones being lower on firepower and armour. Reconnaiss-ance vehicles either patrol with aircraft or light tanks depending on whether or not they can fly. Rocket launchers are armed with very destructive missiles and need to be approached cautiously. Radar stations jam your radar, detect you at long range and guide alien forces towards you.



●Close-up of the view screen, showing pyramidal mines and a ridge in the distance.



Communications forts draw in the heavy opposition towards you, and that's where the indicator bar at the top of the screen comes in, keeping you aware of how well informed the enemy are of your position. If it's green, for instance, your position is unknown to them, while red means aliens know where you are. Finally there's the main fort that must be demolished if you're to win the game. Everything can be destroyed with either the cannon or missiles, though some targets take several hits.

The vectors are well drawn and there's no flicker in them, but considering the comparatively small playing area it should have been possible to make the action a little faster. Colour is used well to indicate different terrain types and the rest of the display is clear and easy to read. Sound is limited to explosions, but they're done well.

One thing and one thing only prevents *Arctixfox* from being a fantastic game and that's a lack of action. For the first few minutes there is plenty of opportunity to blast aliens and destroy air converters, but from then on it's mostly a matter of driving around looking for something to destroy, so that you end up driving over ridges for excitement.

Even so it's a very good game that should keep you occupied for many months before you finally thwart the invaders. **GBH**

FIRST DAY TARGET
SCORE 1,000 points

SECOND OPINION

"Lots of features here. Blizzards force you into mistakes and the hills and obstacles are good too. This is not a simple blasting game, but requires some thought. Pity about the naff screen presentation – more effort here would have only helped. Novel, not fascinating." **PbM**

GREEN SCREEN: No problems

Coming soon

Sneak previews of games destined for your CPC

AD & D: good news, bad news for CPC

Do you want the good news or the bad news? OK the good news: the first product in the Advanced Dungeons and Dragons (AD&D) range is due for release soon by US Gold. It's *Heroes of the Lance* and is based on the first of the Dragonlance role-playing supplements to the AD&D game, Dragons of Despair.

A brave party of adventurers venture into the ruins of the temple of Xat Tsaroth to retrieve the valuable Disks of Mishakal. The eight are Tanis, Sturm, Riverwind, Goldmoon, Raistlin, Caramon, Flint, and Tasslehoff. Tanis is the red haired and bearded leader of the party, Flint a dwarf, Tasslehoff a thief, Sturm a Knight and Goldmoon carries the blue crystal staff that brings people back from the dead. Raistlin and Caramon are twin brothers, the former a wizard and the latter a warrior. Careful selection of which character does what is an important part of the game, something best learnt through experience.

As the group delves deeper into the temple they encounter the Draconians, undead and other monstrous creatures until they finally reach the Disks of Mishakal. Unfortunately the disks are guarded by an ancient black dragon who must be defeated before you can leave with the disks.



The *Heroes of the Lance* won't end there though, because US Gold may well convert all 15 Dragonlance scenarios to the computer over the next four years. *Heroes of the Lance* is due for a September release and will of course be reviewed fully in these pages.

Oh yes, the bad news. The computer version of the role-playing game is unlikely to appear on the CPC. *Pool of Radiance* was scheduled to be the first release in the role-playing line, but it now seems doubtful. *Pool* is going to come out on the Commodore 64, though, so it should be possible for the CPC to run it. US Gold are not sure that the cost of converting to CPC would be recouped, so it's up to you, our loyal readers, to convince US Gold what a good idea it would be to release *Pool of Radiance* on CPC.



Mickey Mouse

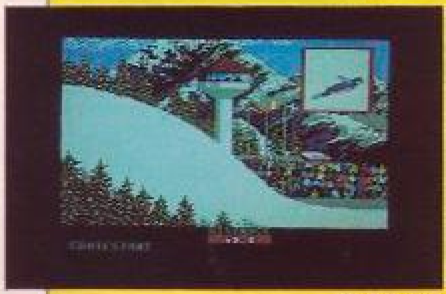
Gremlin ● £9.99 tape, £14.99 disk

In *AA32* we revealed that Gremlin had signed a deal with Walt Disney (the company, not the man. He's dead you know) to bring the most famous mouse of all time to the computer screen. The Ogre King and his four evil witches have stolen the wand of Merlin and plan to do nasty things with it, and what's more a spell has been cast over the land that enables the Ogre King to rule. After the casting the wand is broken and a piece given into the care of each of the witches. Enchanted water has been stolen and used to create evil creatures to guard the tower of the four witches. Mickey has a single flagon of the enchanted water to take with him on his quest to retrieve the wand. When Mickey has it he must find the Ogre King and bash his skull in with it. Doesn't sound like loveable Mickey at all!



Gold, Silver and Bronze

Epyx ● £14.99 tape, £24.99 disk ● September


Ski Jump



Bobsled

This Epyx compilation features *Summer Games* and *Summer Games II* (not previously released on the CPC) and *Winter Games*, a *Rave* in *AA9*.

The events are figure skating, free skating, speed skating, ski jump, hot dog, biathlon, bobsled... *(pauses for breath)* ...triple jump, rowing, javelin, show jumping, high jump fencing, cycling, canoeing, pole vault, 100M dash, gymnastics, freestyle relay (swimming), 100M freestyle, skeet shooting, 4x400M relay and diving. *Phew!*

WIZARD WARZ

Go ● £9.99 cass, £14.99 disk joystick/keys



Despite what people think, life as a junior wizard is not all it's cracked up to be. It's not the most exciting job in the world, and the hours are pretty bad too. You decide that you've had enough of apprenticeship and want to go for real power and become the greatest wizard in the land. For that you'll have to take on the current Top Wizzes but before you're ready for that you'll need to get in some serious monster bashing.

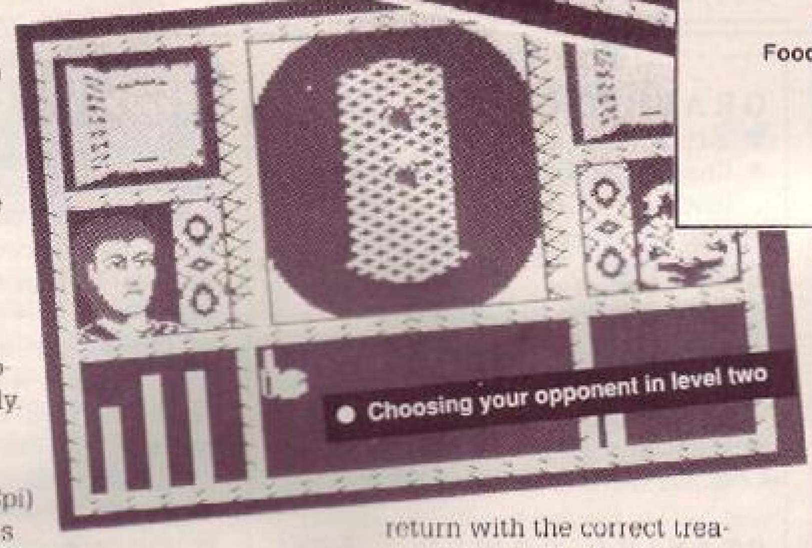
SECOND OPINION

"Wizard Warz on the CPC was a grave error. The game design is fairly detailed, but the emphasis is too much on destruction. Let's face it, if this is typical wizard behaviour, the playing area would be a desert in months." **PbM**

GREEN SCREEN: OK



● Some food and treasures have been collected



● Choosing your opponent in level two

On the screen you get a circular view of the area immediately around you with a status panel for you and your opponent, while at the bottom of the screen is a picture of the objects you're carrying. Your status panel has a spell book, bar chart and picture of you – your opponent's is laid out identically. The bar chart has three bars that represent your physical (Phy), spiritual (Spi) and mental (Men) qualities. If any of these reaches zero you die.

Spells are what you use to defeat opponents in this game and they come in the three categories of Phy, Spi and Men. Phy spells damage your opponent's Phy or protect yours and the same applies to Men and Spi spells. There are 26 spells to choose from, and their cost in points varies from spell to spell. More expensive spells are more powerful.

The game is split into three levels that load separately one after the other. In the first level you have to find six treasures, each stolen from a different town by a monster. The only way you can retrieve the treasure is by killing the monster that stole it. The first time you enter a town you'll be given some food (which restores your Phy to maximum), and when you return with the correct treasure the grateful inhabitants give two more meals. When the sixth treasure has been recovered it's time to find the seventh town and set off for the second part of game.

Part two is completed when you find a ring, wand and dagger. Each of these is guarded by a monster that must be fought. There are lots of monsters to choose from and they can be fought in any order. Unfortunately you have no idea which monster has which object, and since there are 32 monsters and only three objects you'll be very lucky to find them all first time. The monsters that don't have objects have spells instead that you can store in your spell book. If you don't want the spell then you'll get your energy recharged. You may also be offered a familiar that gives you immunity to a particular spell.

At last you get to take on the seven sorcerers and go for the title of Greatest Living Wiz. All you need do to achieve this long felt want (wand?) is to defeat each of them in single combat. A wide range of spells should now be at your disposal to eradicate the opposing wizard. Beware, though, because every wizard has a familiar which protects just as well as yours will.

The graphics of the circular playing area are small and often confusing, but the scrolling is smooth and fast. The pictures of you and your opponents are colourful and rather well done. There are, however, no tunes and no sound effects: you inhabit a silent world, it seems.

The advertising implies that you're in for a role playing game. Instead you get a simple arcade game that has had some spells thrown in to add interest. The result is a confusing arcade game that takes a considerable amount of time to complete. **GBH**

FIRST DAY TARGET
Complete level one.

Your spell book
Phy, Spi and Men are shown as bars
Food and treasures collected are shown here
Your view of the world decreases in size as you get weaker
Monsters have spell books too
A skeleton prepares for battle

The Verdict

GRAPHICS 58%
- The monster pictures are good...
- ■ but the round playing area isn't.

SONICS 0%
- ■ Silence isn't golden.

GRAB FACTOR 64%
- Fun learning the weaknesses of your enemies.
- ■ Stage two is a bit too difficult at first.

STAYING POWER 55%
- Three levels to the game and the seven wizards take some beating.
- ■ Chop up one monster and you've diced 'em all.

AA RATING 57%
- ■ Is this what the computer industry really thinks role playing is all about? They couldn't be more wrong.

THE FURY

Martech ● £9.99 cass, £14.99 disk joystick/keys

The Rim is a curved track floating in space where beings from all over the galaxy congregate to hurtle around in a demolition derby style race. Your simple task is to stay alive and beat your opponents by whatever means possible.

A narrow bar across the centre of the screen represents the Rim and a view of the galaxy appears above and below it. At the bottom is a panel indicating your speed, fuel and time. A damage indicator warns of impending destruction and a radar displays what's in your vicinity.

There are three types of race: killing races, time runs and tag races. In a killing race you use whatever weapons you can afford to destroy your quota of Noids (other cars) to survive. During time runs failing to finish within the time limit causes you to be thrown out of the race. Destroying opponents' cars increases your score by their bounty value and increases the bounty on your head. In tag races one car is chosen to be 'it' and is tracked by a crosshair: the only way out is by tagging another car. The 'it' car constantly suffers damage, so get rid of it quickly!

You begin as an Avenger, a bottom of the range car: others can be bought, but you have to earn the money first. Your car can be equipped with flame throwers, rockets and an ejector pod so that you stand a better chance of surviving. It can be repaired too, but it all costs money.

Graphics and sound can be summed up in one word: aargh. The graphics are tiny and give no impression of movement along the track, while sound effects are dire – and there are no tunes either.

There are only three types of race and the differences between them are minor. All you get is a simple game of blasting and crashing into opponents' cars and doing your best to stay in one piece. **GBH**

SECOND OPINION

"This idea has been around for years now, and there is still life in it, but graphics let The Fury *down so badly that it is headed straight for the budget/compilation ghetto."* **PbM**

GREEN SCREEN: No problem

The Verdict

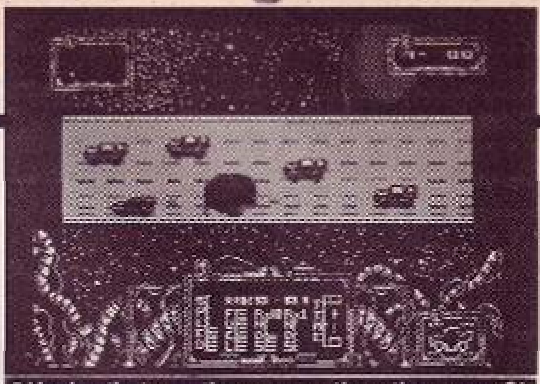
GRAPHICS 34%
- ■ No impression of movement.
- ■ Poor use of colour.

SONICS 21%
- ■ Feeble sound effects.

GRAB FACTOR 47%
- □ You'll keep playing for a while, but you won't know why!
- ■ After the few hours you'll feel there's something missing.

STAYING POWER 41%
- ■ You'll get bored.
- ■ Not enough variation from game to game.

AA RATING 42%
- ■ If it was budget it would be good value, but at full price it's very poor.



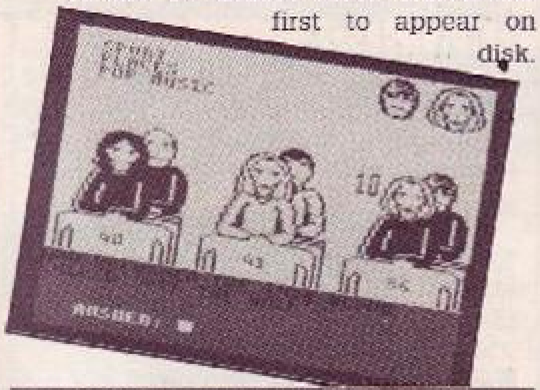
● You're that car there – no, the other one. Oh what the heck they all look the same anyway.

FIRST DAY TARGET
Complete four races.

EVERY SECOND COUNTS

TV Games/Domark ● £7.95 cass, £12.95 disk ● keys only

TV quiz shows on the home micro are ever-increasing, and the majority appear on the 'TV Games' label. This is the first to appear on disk.



● 70 seconds to complete the final round

Up to three teams of two players can take part, and though one person can play it alone it loses most of its appeal with no opposition. The screen shows the teams with their score below and questions appear in the bottom part of the screen. Three boxes at the top of the screen hold the answers for you to choose from.

The idea is to accumulate seconds of time by correctly answering the questions put to you by the computer equivalent of Paul Daniels. A game is split into five rounds and two bonus rounds. The first two rounds are true or false questions in which you earn two seconds for every correct answer. A wrong answer means that you can't answer any more questions for the rest of the round. Next there's a bonus round in which you can earn bonus seconds. Following the bonus round are two true and false rounds and another bonus round. The second pair of true-false rounds earn four seconds for each question.

After the second bonus round the team with most seconds on the clock enters the final round in which you switch off four lights by answering four questions. The process is repeated till you run out of time.

Graphically it's not spectacular, but colour is used well. There are some pleasant tunes that crop up periodically and sound effects are simple but effective.

As with all TV games *Every Second Counts* is pointless with just one player. A computer opponent is essential, unless your family don't mind being dragged in every time you want to play. Even so, TV Games are improving and this is one of their best efforts to date. **GBH**

The Verdict

GRAPHICS 45%
- ■ Virtually text only.
- ■ Chunky graphics to represent the teams.

SONICS 51%
- ■ Some good tunes occasionally.

GRAB FACTOR 69%
- □ Fun for all the family.
- ■ Unfortunately you need the whole family there to play it properly.

STAYING POWER 59%
- □ Several sets of questions can be loaded in.
- ■ Once you've answered them all there's no challenge.

AA RATING 61%
- □ The TV show has been converted well to the CPC, but the need for several players is against it.

FIRST DAY TARGET
Score 60 seconds.

SECOND OPINION

"As quiz games go this isn't bad. After a few plays, though, you realise the shallowness of all TV quiz games." **PbM**

GREEN SCREEN: OK

DESOLATOR

US Gold ● £9.99 cass, £14.99 disk jcystick or keys

Mac is a hero and Kairos the bad guy. Your task is to guide Mac through the Halls of Kairos to rescue the infants that have been imprisoned behind mirrors by Kairos.

The playing area is viewed from above and behind to give a simple 3D view. As you move off the top of one screen the next flicks into sight. A panel to the right displays your score, energy, lives and level. When you run out of energy you lose one of your five lives.

You wander the Halls of Kairos with nothing but your fists to defend you initially, though weapons can be collected to use against your foes. Collecting infants is accomplished by breaking with a well placed punch at the mirrors behind which they're imprisoned. A bonus for collecting infants is that after you're freed a certain amount you become Machoman (yes, really) and can then bash bad guys much more easily. Wandering around in the Halls you encounter minions of Kairos who hamper your progress. They can be bashed with a punch or slain with one of the weapons.

There are several objects hanging on walls that can be punched to give the



●Smashing windows releases infants

desired effect. A clock stops everyone from moving and a deer's head acts like a smart bomb. Ground-based objects include energy squares, jars and mines. Mines kill you and energy squares add to your energy total.

The loading tune is alright, but there are only short tunes in the game itself. Sound effects are loud and explosive. Animation of the figures is jerky, there are only two stages to the game and colour is not very cleverly used.

US Gold have been converting lots of arcade games to the CPC, and in general they have done the job badly. There are occasions when a good conversion crops up.

This isn't one of them. GBH

FIRST DAY TARGET
150,000 points.

SECOND OPINION

"Visually Desolator *is very unappealing. Some features are like sparks in the dark and in conjunction with better action they could have made all the difference. As it is they're just wasted."*

PbM

GREEN SCREEN VIEW: *Alright*

The Verdict

GRAPHICS 51%
- ■ Jerky animation of characters.
- ■ Poor attempt at 3D perspective.

SONICS 48%
- □ Nice explosions.
- ■ Average loading time.

GRAB FACTOR 54%
- ■ Uninspiring gameplay that neither begs you to play...
- ■ Nor send you screaming from the computer.

STAYING POWER 48%
- □ Difficulty increases as you delve deeper in to the Halls.
- ■ Just the same old monsters to kill.

AA RATING 50%
- ■ Just another badly done conversion of an arcade game.

THE FLINTSTONES

Grand Slam ● £8.95 cass, £12.95 disk joystick/keys

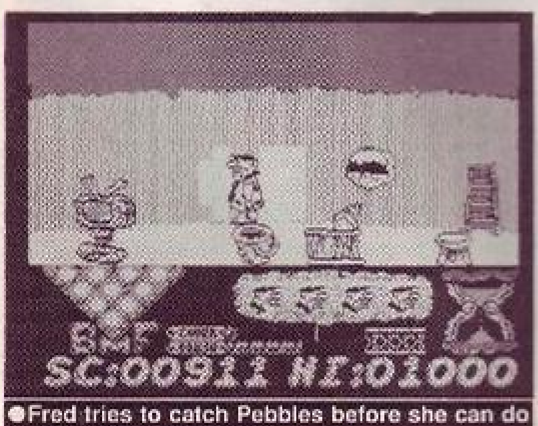
Fred Flintstone and Barney Rubble are looking forward to the final of the Bedrock Super Bowl tomorrow. Unfortunately for Fred his mother-in-law is due to arrive the same day and his wife, Wilma, says that he must paint the living-room. Wilma is going out and so Fred has to baby sit too.

There are four stages to the game: painting, the journey, bowling and the rescue. Fred is armed with a paint brush, a ladder and plenty of paint and all he has to do is to paint the wall before Wilma returns. But his daughter, Pebbles, has a tendency to escape from her playpen and draw on the wall. The only way to stop Pebbles is by catching her and putting her back in the Playpen. When you pick up Pebbles you have to put down the brush, which happens to be a small furry creature with ideas of freedom.

If you do manage to paint the wall then it's off to the bowling alley. The road to the alley is rough and one of the rear wheels falls off when it hits a bump. Fred has to jack the car up and replace the wheel. The third stage is a bowling competition between Fred and Barney. After the contest Fred returns home to find that Pebbles has escaped and gone into a building site. She's high up on the girders and Fred must rescue her.

Fans of the cartoon will recognise the theme tune on the title screen and another tune plays throughout the game. But there are no sound effects. The graphics are detailed, but it's a pity there's not much colour.The pace is slow and the game itself is too easy. Younger readers may enjoy it for a while, but older ones may not find enough to challenge them. GBH

FIRST DAY TARGET
Complete part two.



●Fred tries to catch Pebbles before she can do any damage to the walls.

The Verdict

GRAPHICS 69%
- □ Detailed and well animated characters.
- ■ Colour is not used to its full potential.

SONICS 58%
- □ Great title tune.
- ■ In-game tune slow and depressing.

GRAB FACTOR 54%
- □ Nice opening sequence of Fred leaving work.
- ■ Messages in speech bubbles take too long to disappear.

STAYING POWER 46%
- ■ Pace is far too slow and you'll end up dying of boredom.

AA RATING 49%
- ■ Strictly for younger readers.

SECOND OPINION

"Well, it's not going to win many prizes, but I quite like it, and I'm not a 'younger reader'!

Definitely one to try before you buy."

SC

GREEN SCREEN: DUR, OK FRED

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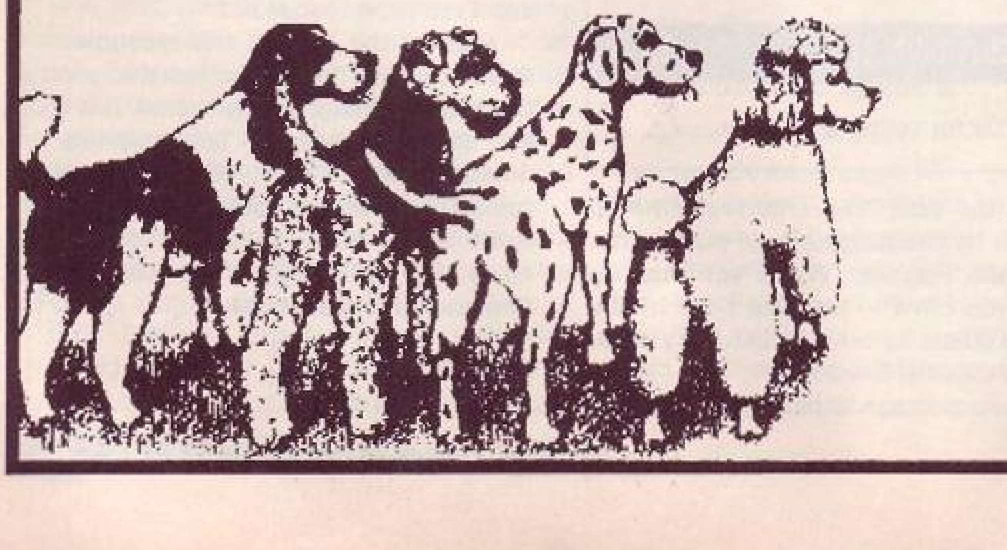
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Play it again, Sam!

Is Gary Barrett under the influence again? Why does he keep seeing double?
Is Gary Barrett under the influence again? Why does he keep seeing double?

At the end of *Crocodile Dundee*, the big smash film of 1986, the hero finally gets the girl and everyone lives happily ever after. Or do they? Well, we're about to find out because *Crocodile Dundee II* is Coming Soon, as they say, to a Cinema Near You. And that's hardly any great surprise, though if the sequel is anywhere as good as the original that will be.


Crocodile Dundee demands a fair crack of the sequel...

But why are sequels of books, films and computer games so popular? One reason is the great importance all human societies place on stories, on the urge to know what happens next. Ever since the novel as we know it began in the seventeenth century there have been follow-ups, and in our own times every episode of *Batman* leaves the caped crusader up to his neck in it, so that the desire to know how he's going to get out of it will force us to switch on next week, same time, same channel. We become attached to our heroes and heroines, and crave to know what happens to them after the story ends. Unless the central character actually dies, the pressure on the author to produce more adventures is directly proportional to the success of the story.

But if one wants to be more cynical about all this – and where large sums of money are involved it's probably a good idea – there is a much more obvious reason why sequels are so often attempted. If a formula works once, goes the argument, it's just got to work twice. The financial success of the *Star Wars*, *Rambo* and *Rocky* series, of the *Superman* and *Jaws* films and now, in America at least, of *Croc II* suggests the money men may have a point. (At the moment, *Friday the 13th Part VII* is high in the American film charts!) Indeed, in the case of *Raiders of the Lost Ark* and *Butch Cassidy and the Sundance Kid* the movie makers resorted to 'prequels', with the events of the second film predating those of the first.





Arkanoid and *Arkanoid II*: spot the difference!

Druid and *Druid II*: the sequel was a big improvement.

More often than not the sequel is far inferior to the original. *Psycho II* wasn't a patch on the original, *Beverly Hills Cop II* was universally slated by the critics, but in both cases it didn't stop the follow-up from making loadsamoney. There is however the occasional exception: *Alien* and *Aliens* come out about even, and for many people *The Empire Strikes Back* was even better than the original *Star Wars*.

Computer sequels

The computer industry is much younger than the world of the silver screen, but that hasn't prevented the money men falling prey to the lure of the sequel. Indeed, even that old classic *Space Invaders* had a follow up, *Invaders' Revenge*. Ever since, there have been games with sequels - *Star Wars*, *Gauntlet*, *Arkanoid*, *Barbarian*, *Matchday*, *Druid*...


Gauntlet II: very much like the original, but more varied and enjoyable.

Sequels arrived on the home micro not long after the computers themselves. The highly successful *Manic Miner*, which spent a long time at the top of the software charts, was one of the earliest computer games to have a sequel, *Jet Set Willy*; and a third game in the same vein was widely rumoured called *Willy meets the Taxman*. Willy never met the taxman, however, presumably because sales of the second game did not match those of the first.

Computer sequels are not restricted to arcade games: adventures and strategy games have them too. Level 9 brought out the adventure *Snowball* with a trilogy already in mind, and sure enough *Return to Eden* and *The Worm in Paradise* did indeed materialise. On the strategy front there's *Lords of Midnight* from Beyond and *Domdark's Revenge* which continued the fight against evil. A third game, *Eye of the Moon*, never made it to the small screen.


Doomdark's Revenge: the sequel to *Lords of Midnight*.

Arkanoid appeared in two arcade incarnations, and did the same thing on CPC. Both are breakout clones with the aim being to destroy bricks with a bouncing ball and a bat. Both were *Raves*. The differences between the two were minor: more screens, a few extra features

The sequel Incentive

Most sequels can be seen in retrospect to be complete rip-offs, but there are honorable exceptions. The excellent *Driller* thoroughly deserved the coveted title of *Mastergame* and, perhaps to many people's surprise, so too did its successor *Darkside* – the first pair of original and sequel to achieve the *Mastergame* double.

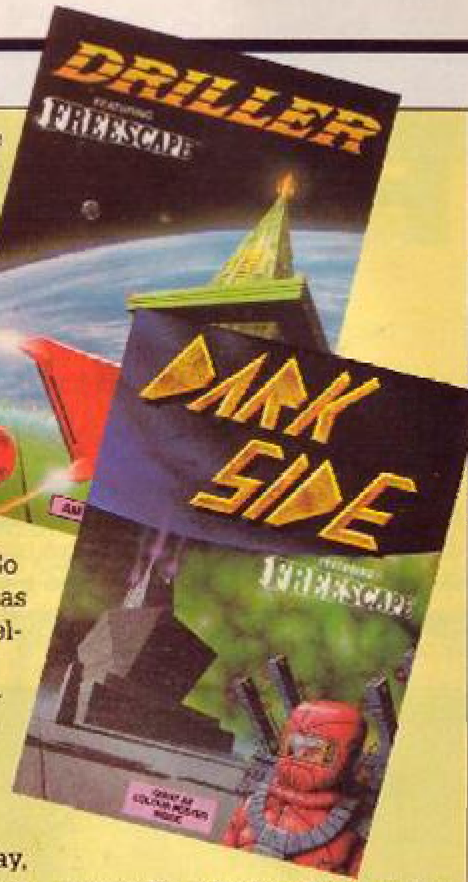


The Incentive crew, with Ian Andrew on the left

Ian Andrew is quite rightly proud of this success, and he reveals that it was not until just after the release of *Driller*, around Christmas 1987, that Incentive decided on a sequel, a decision prompted by its tremendous public and critical reception. 'We realised then', he recalls, 'that there was enough demand for a follow-up'.

"People feel a bit cheated by the same game with new graphics if that's all they get for their money"

Driller reached number 18 in the software charts and hung around in the 20 to 30 area for about eight weeks. Ian now admits that it did not do even better mainly because of the relatively high price (£14.95 cassette, £17.95 disk). Why was the price so high? 'A lot of development time went into the game *[Driller]*', Ian explains, 'because we didn't want to release it until we were completely satisfied. Of course there was a novella and map in there too, and that all adds to the cost. Furthermore we hadn't done an arcade game for two years, and so we were to some extent unknown to a large portion of the market'.



Is that why *Darkside* is cheaper than *Driller*? 'It's not quite as simple as that. You see, when we were starting on *Darkside* after completing *Driller* the Freescape system was already in existence. So we didn't have to spend as much time and money developing it.

'In *Driller* we concentrated on Freescape more than the game, but with *Darkside* we already had Freescape. So more time was devoted to the game play, and we could still produce it more cheaply'.

Are there plans for another follow up to *Darkside*, or are you leaving it at that? 'Well, there won't be another game in that series, but the Freescape system is going to be used in future releases'.

Finally, now that you've actually produced a sequel for yourself, what's your opinion of them in general? 'Sequels definitely have to be strong. They should be able to stand on their own two feet as a game rather than just relying on the previous game's reputation. People feel a bit cheated by the same game with new graphics if that's all they get for their money.'

The Sequels

Game	Review	Sequel(s)	Review	Software House
Arkanoid	22	*Arkanoid II*	32	Imagine
Barbarian	23	*Barbarian II*		Palace
Driller	28	*Darkside*	34	Incentive
Druid	15	*Enlightenment*	31	Firebird
Dun Darach	1	*Tir Na Nog*		Rebound
Gauntlet	16	*Gauntlet II*	28	US Gold
Matchday	2	*Matchday II*	28	Ocean
Rambo	8	*Rambo III*		Ocean
Spellbound	6	*Knight Tyme*	11	
		Stormbringer	23	Mastertronic
Starstrike	1	*Starstrike II*	12	Firebird
Starwars	29	*Empire Strikes Back*		Domark

and a choice of routes to take to your final confrontation. *Arkanoid II* is slightly better on playability, but really it is hard to see why anyone would want to own both games.

Gauntlet was a *Mastergame* and *Gauntlet II* a *Rave*. The plot is simple: you and an optional second player charge around a monster-filled dungeon collecting treasures and magic while killing – or being killed by – the monsters. Both play very similarly and the differences are still minor, but if they were reviewed together there is little doubt that the sequel would come out on top. It may not be original, but the gameplay is slightly better and there's more variation than in *Gauntlet*.

Druid and *Enlightenment* are similar to *Gauntlet* in that the sequel improved on the original. In both you play a Druid slaying monsters in the tradition of *Gauntlet* and doing your best to stay alive. There was more depth to the sequel and you had a wider choice of spells to make it a more challenging game. A second player could join in as a golem, but it was just a pity they didn't increase his role so that it was a fully-fledged two player game.

Magic Knight is the hero of a trilogy of almost identical budget titles, *Spellbound, Knight Tyme* and *Stormbringer*. All three are based around a unique window system for interacting with your surroundings and solving problems that don't always have logical solutions. The graphics and sound are the same throughout and unless you were really hooked on the first game you could live quite happily without the other two.

Matchday 1: Matchday 2

One rare instance of a sequel far superior to the original is *Matchday II*, an arcade action football game where you control the player nearest to the ball, with the opposition represented by



Matchday I...



and *Matchday II*

Coming Soon To Your Screen

Barbarian II
Palace



Barbarian caused quite a stir on its first appearance back in 1986 (*AA23*). Not only was it a very good hack and slay combat game, but it also gained a reputation for the cover art featuring over-endowed page three girl Maria Whitaker. She was wearing as little as possible then, and she's as underdressed this time round.

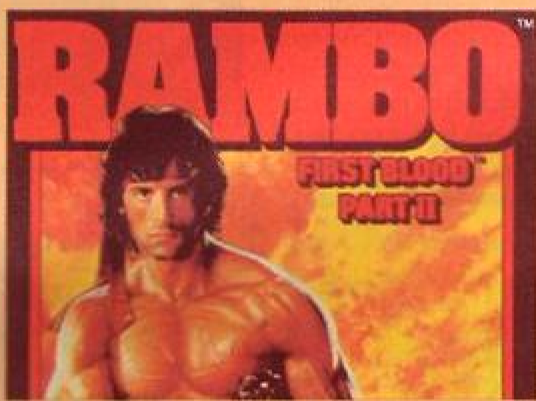
Barbarian II - The Dungeons of Drax is the title, and the style of play is similar to the original. Rather than just taking on other barbarians, though, you now have a wider variety of monstrous foes to chop into little bits. You also have a choice of roles: you don't have to be the beautiful barbarian, you can be a hunky princess instead *(? -ed.)*. Arrives in August.

Rambo III
Ocean

Sylvester Stallone has returned to the cinema screen in yet another film starring John Rambo. *First Blood* was the first in the series, then there was *Rambo* and now there's *Rambo III* (what happened to *Rambo II?)*.

In his latest film Rambo is sent to Afghanistan to kill Russians (sounds familiar). Apparently Sylvester Stallone was paid 20 million dollars and since he utters only about 140 words in the entire picture that works out at about 140,000 dollars per word.

Ocean have bought the rights for a computer version of the film. Expect something violent later this year.



Empire Strikes Back
Domark



Not only was *Star Wars* a trilogy, but it looks like the computer games are going to do the same. All three appeared in the arcades and the second, *The Empire Strikes Back*, is in the final stages of completion.

In the first part of the game the Imperial Walkers are attacking the Rebel base on the ice planet of Hoth and you have to blast them before they get you. As in the film the Walkers can be tripped and brought explosively to the ground. Later you navigate the Millenium Falcon through an asteroid belt, avoiding fire from the Empire's Tie fighters.

Empire is due at the end of July at £9.95 on tape and £14.95 on disk.

another player or the computer. The first game was good, but the extra features added to the sequel made it well worth buying. One additional option is for two players to take on the computer. It doesn't sound important, but it does make the game more fun.

Tir Na Nog preceded *Dun Darach*, but wasn't originally available for the CPC, only appearing in this format after its prequel (still with me?). In both you control a large well-animated character who strides around the landscape fighting or avoiding equally well-animated opponents. The differences make it worthwhile owning both.

Starstrike and *Starstrike II* are so different in appearance – the former using 3D vector graphics and the latter filled 3D – that the second is a sequel in name only. *Starstrike* was a pure shoot-em-up with *Star Wars* overtones – indeed, *Starstrike* is the game *Star Wars* should have been. There is more to *Starstrike II*, though, because there are aspects to the game other than blasting.

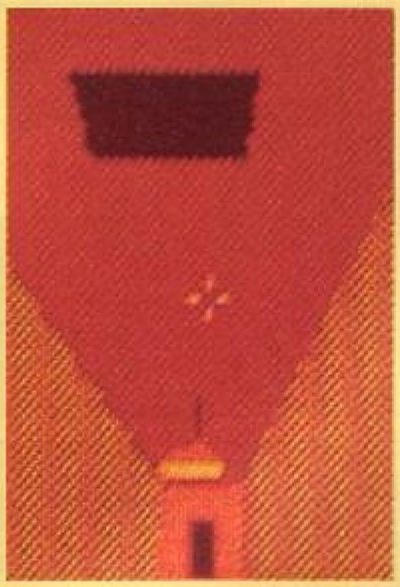
In a similar way *Alien* and *Aliens*, while both relying on tension and suspense to provide atmosphere, are worlds apart in gameplay. In these instances the notion of a sequel has become so tenuous as to have lost all meaning altogether.

Contacts

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Competition

What do you think was the best computer sequel ever? OR what was the worst? In conjunction with Incentive Software Ltd we're giving away copies of *Dark Side* for the wittiest or most convincing answer. Just send your entry, with an explanation of no more than 20 words, on the back of a postcard or envelope (we won't open any envelopes!) to: *DARK SIDE, Amstrad Action*, Future Publishing, 4 Queen St, Bath BA1 1EJ before 12 August.



Soldering on

A hardware project that will really get your CPC talking

Many people want to get computers talking to each other. This gadget from **Rafe Aldridge** of Woodford Green does just that, and incidentally illustrates a good deal about the innards of computers. (The cheque's in the post, Rafe.) Oh, and it's fun too!

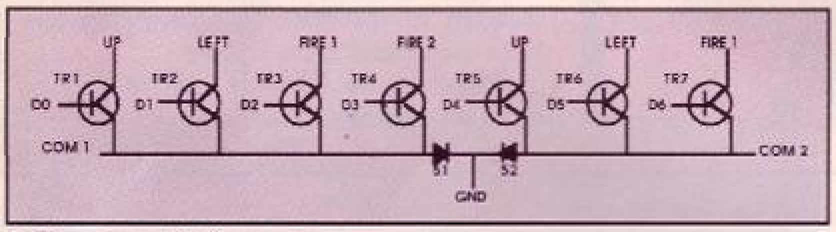
The circuit enables one way communication between two CPC's. If you want them to be able to talk both ways, simply build another device to go the other way.

Now don't get the wrong idea. When I say talk, I mean mean very limited communication, i.e. seven bit data transmission. All the really clever work has to be done by software, rather than us presenting a really flash interface you'd admire but never actually get around to *building*.

How it works

The CPCPC link connects two CPC computers and enables data to travel between them using the printer port and the joystick port.

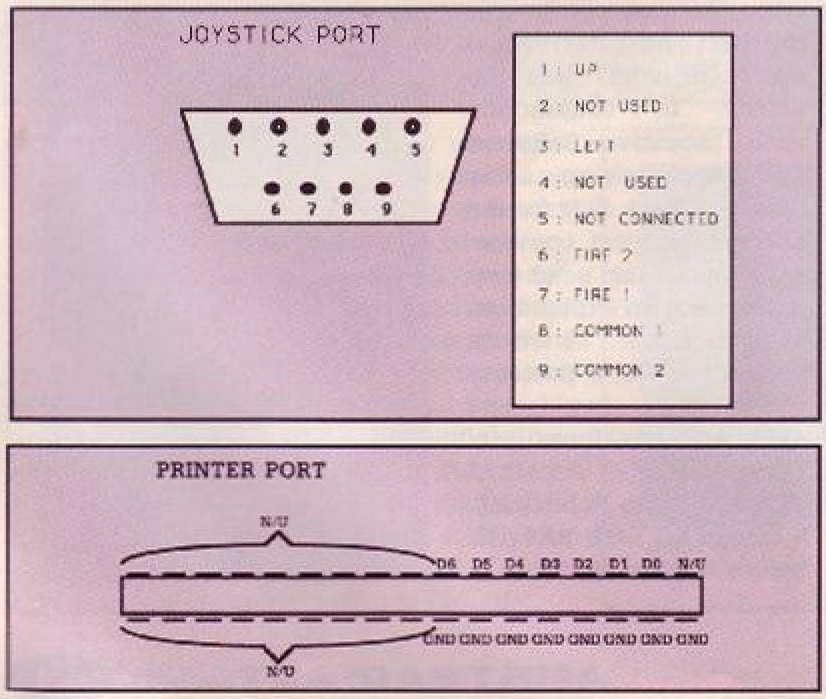
The theory is simple. The ascii code of the character is sent to the printer port (&EF00) and according to its value in binary the seven pins are set in a pattern of ons and offs. If a pin is on then a corresponding pin in one of the joysticks is connected to ground, i.e. switched on.

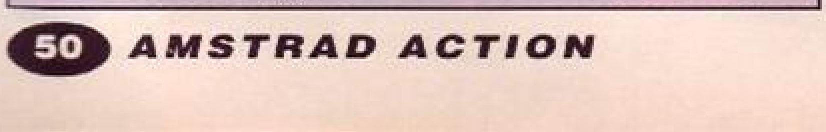


● The schematic diagram

When this happens the receiving end gets a signal which can be read by means of the JOY command. To turn these signals back into an ascii code use the following procedure. Check each joystick pin in turn, to see if it is on or off. Do this by converting the value received by JOY(0) and JOY(1) into binary and looking at the appropiate digit.

The method consists of taking each output from the printer port and applying it to a transistor. These devices are similar to switches except that electricity activates them rather than people. So this sets the value of each joystick pin.





Components

Abbrev	*Name*
TR1-TR7	7 X 3TX300 Silicon Transistors (gen. purpose) Alternative: BC108 type
Joystick Port	9 pin female subminiature D type
Printer Port	0.1 in pitch double side edge connector minimum of 16 way
Board	0.1 in strip matrix board min 3 strips by 21 holes
Cable	0.5 Metre 10 way ribbon cable preferably colour coded
S1-S2	2 X General purpose diode IN4148

Contact: Maplin Electronics Ltd, PO Box 3, Rayleigh, Essex, SS6 8LR ✆ 0702 554 155

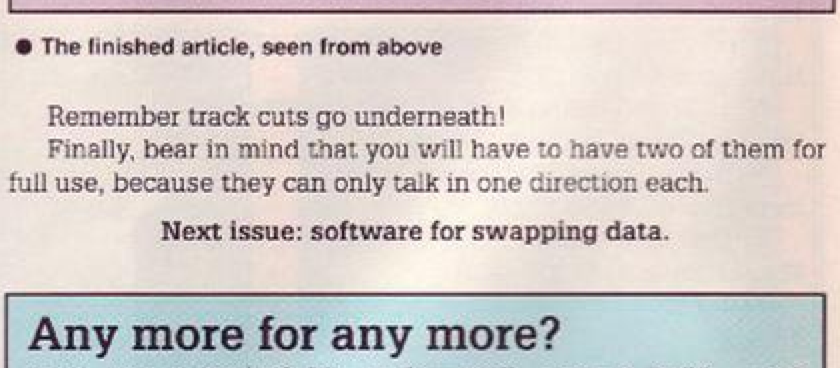
If it is on, add the corresponding value to a variable. When you have done this you will be back to the original value ready for processing.

Construction

The project is simple – there is hardly a wide variety of components to confuse. On the other hand, bear in mind the large number of connections, and concentrate on getting them right. Ideally, use colour coded ribbon cable.

Be careful when soldering the transistors not to overheat them, as they are easy to ruin. And note their orientation, because getting them wrong could prove disastrous to the component!

The cost of the project is not prohibitive. General purpose transistors cost around 20p each, at worst. Buying in bulk makes them even cheaper.



● The finished article, seen from above

Remember track cuts go underneath!

Finally, bear in mind that you will have to have two of them for full use, because they can only talk in one direction each.

Next issue: software for swapping data.

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CPC 464 Add-Ons. KDS modem – interface/software. – £60. Superpower romboard + 5 roms, – £60. MirageImager, – £20, Light-pen + software (disc), – £10, D K 'Tronics 64K ram, – £20, 173 Caterham Drive, Old Coulsdon, Surrey. Tel: 01-660 9640 (evenings).

CPC 464 colour monitor, joystick, many games, tutorial guide, speech synthesiser, little used, boxed, perfect condition. Cost over £600, including Driver, Sentinel, Space Harrier, Friday 13th, 3D Boxing. Accept £270 ono. Tel: 01 654 6366.

Mono CPC 464, database, TV modulator, joystick – over £170 software, 5 months old, excellent condition. Total worth £430, sell for only £190! Phone 0342-87481 after 6pm.

CPC 6128, colour monitor + 5.25" second drive, 256K silicon disc, RS232, leads for cassette deck, altogether £365, including P&P anywhere. (Also 464 mono monitor – £20). Telephone: Scott Baggler (0665-87) 3176.

CPC public domain disk – crammed with utilities, ST style desktop, file un-erase, extended basic, graphics, sector editor, loads more only £6! DW Software, 62 Lascelles Avenue, Withernsea, HU19 2EB (0964) 612070.

CPC Business software on disc: Sales & Purchase Ledgers, VAT, Stock Control, Mailing List/Labels etc all for £24.95. 'Small Business Booster – Has the lot.' (AA26). Sales Invoicing only £19.95 (£9.95 with pack). General Ledger (computerised cash book) £19.95 (£14,95 with pack). All fully menu-driven & Epson compatible. Cheques/POs or SAE for details: SD Microsystems (AA), PO Box 24, Hitchin, Herts. Phone (0462) 675106

CPC 6128, mono (just serviced) plus modulator. Tasword 6128, Qualitas+, loadsa' discs (games, utilities, junk etc...) Amstrad Action 3-32, disc box, books. Any offers? Phone Geoff on (0533) 858352. Will sell separately.

Amstrad CPC464 + colour monitor + lots of books, some software, good condition. Only £160, no timewasters. Hornchurch 57507.

Colour CPC464 hardly used, vgc with many games, utilities and manual. Quick sale required hence low price £220 ono. 0572 812993 after 6pm (Alan) Oakham area between Leicester and Peterboro'.

Amstrad CPC6128 and colour monitor plus £350 worth of software plus tape recorder and AMX Mouse, with manuals, total value as new £750, only £325 ono. Tel (061) 339 4843 6pm-10pm.

Cheap software, Datel Sampler, Music System, Poolswinner, Coarsewinner, Gold Collection II, Arkham Manor, Murder on Atlantic, Amsoft Database, Tasword 464, Vera Cruz, Jailbreak, plus others. All originals. Phone Letchworth 480674.

Win Win Win loadsamoney and software when you play The Adventure Game Superransom. Send £7.60p tape and £9.99p disc to: M Brierton, 32 Studley Road, Wallasey Village, Merseyside L45 6TW.

Box of 10 unused cased 3" Amsoft discs £17.95 + £1 P&P. Send cheques PO/s to First Byte Software, 71 Barn Glebe, Trowbridge, Wilts. Tel: 02214 65086

Colour Amstrad CPC6128, 57 disk games, 60+ cassette, with cassette player and cable. Multiface 2, joysticks, Mouse, utilities, books, magazines, other accessories. Altogether £550 or will sell seperately. Phone Preston 712689.

Database, word processor CPC628 only. Powerful, quality programs, see review in July's AA. Supplied on disc with 'Printcat'. £6 each or together £10. Alan Shapr, 73 Manor Avenue, Aberdeen, AB2 7UT.

Colour CPC464, DDI1 disk drive (brand new), Multiface II, discs, joysticks, 100+ original games, dust covers, screen filter, sell for £495 ono. Phone Phillip (04866) 5425 Guildford area (Surrey).

Make money with your micro. Giant book explains how. £10.00. Large selection back issues AA, ACU, Amtix, CWA, LSAE lists. Mr Small, 8 Cherry Tree Road, Chinnor, Oxon. OX9 4QY

Colour CPC464, Gauntlet, TLL, Highway Encounter, Devil's Crown, Spellbound, all good condition. Bargain at £200. Phone 041 (Glasgow) 943-0622 after 7pm. Quick sale required, upgrading to 6128. Buyer collects.

CPC464 mono, DD-1 disk drive, covers, disk & tape software, joystick, mags & manuals £250. Phone Bob eve/w.ends (0707) 329244 Hertfordshire (could deliver).

SERVICES

We buy/sell 6128 software in perfect order. Send your disc(s) and tel no. or send SAE for a list to Soft Exchange, 101 clifton Road, South Norwood, SE25 6QA

Sex, Phonix tape to disc specialists, No1 in conversion. Multiloaders no problem even Gryzor. State 464/6128 £.50 per game, compilations £1 per game, multiloaders £3.50, add 50p for tapes to be returned if required. Enclose blank disc when ordering. Phonix, 10 Walter St, Draycott, Derby. Tel: 03317 4490 after 7pm.

Tape-to-Disc conversion 464/6128: send original tape(s) plus a disc & 95p per tape (max. 6 tapes per disc) and we will transfer them to disc. Compilation tapes 85p each game. If you want the tapes returned add 30p per tape to the total cost. State whether 464/6128. D.R. Hudson, 1 Chynoweth, Stenalees, St Austell, Cornwall. PL25 4AW. Tel. 0726) 850458

OTHER

Amstrad books at less than half price: Music & Sound, m/c routines, writing adventures, Whole Memory Guide and others. Only £3.50 each + 50p P&P. Also 'Fanzines – How to Publish Them' manual only £1.50 P&P free. Cheques/POs payable to David Thomas or send SAE for details to: Green Acres, Gellinudd, Pontardawe, Swansea, W Glam. SA8 3DS.

This section of the magazine offers you the chance to speak directly to the huge waiting world of CPC owners – or would-be owners. Users report good results.

You can place an ad of up to 30 words for just £5. So you could use it to sell a printer or launch a user group or publicize a piece of software you've written.

One thing you can't advertise is the sale or swap of software. Such ads can be misused by pirates.

Fill in the application form and send it to us together with payment. We'll then place the ad in the next available issue (published 2-7 weeks after we receive your order.

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Please place the following advertisement in the next available issue of Amstrad Action

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Write your advertisement here, one word per box. Include your name and phone no. if you want them printed

TYPE-INS

Look out, here's Pat McDonald and another set of your contributions

Rocky 2

Karolos Seeger's program (AA33) sounds really good. This update by **Mark Smith** of Leicester makes a change. Simply type these lines into the original.

It also asks whether you want to hear it again, instead of continually repeating it.

```
1 'Rocky 2
2 'By Mark Smith
3 'Amstrad Action August 1988
10 ON BREAK GOSUB 770
540 DATA 159,213,90,213,119,127,142,159,142,213,119,127,142
    ,213,106,95,106,119,127,142,159,142,127,142,159,169,159
    ,213
770 '
780 'ON BREAK routine
790 '
800 CLS
810 a$="I hope you have enjoyed this music":b=4:c=3:e=1:
    GOSUB 120:LOCATE 2,13:PRINT "Would you like to listen
    to it again"
820 a$=INKEY$:IF a$="" THEN 820
830 a$=UPPER$(a$)
840 IF a$="Y" THEN RUN ELSE END
```

Turning Wheel

This program, by **Bhupinder Singh Sahota** of Coventry, demonstrates the palette switching technique of animation. It gives the effect of a turning wheel set against a moving background. Very effective!

```
10 REM TURNING WHEEL
20 REM BY BHUPINDER SINGH SAHOTA
30 REM DRAW BACKGROUND
40 FOR I=0 TO 15:INK I,I:NEXT
50 BORDER 0
60 MODE 0
70 FOR B=640 TO 0 STEP -2
80 C=C + 1:IF C=16 THEN C=0
90 PLOT B,0,C:DRAW B,400,C:NEXT
100 REM DRAW WHEEL
110 ORIGIN 320,200
120 FOR D=0 TO 360 STEP 0.7
130 DEG
140 C=C + 1:IF C=16 THEN C=0
150 MOVE 0,0:DRAW SIN(D)*196, COS(D)*196,C
160 NEXT
170 REM ROTATE WHEEL AND MOVE BACKGROUND
180 FOR I=0 TO 15:INK I,26:CALL &BD19:INK I,0:NEXT
190 GOTO 180
```

Darts Scoreboard

Find it difficult to calculate an out at darts – or perhaps just keeping track of a game? This bumper listing from **Roger Martin** of Lowestoft should help out. It handles up to five players, any number to start on and it tells you the highest shot out. It even records the winner of each match.

£50

```
10 REM DART SCOREBOARD
20 REM by Roger Martin
25 REM Amstrad Action August 1988
30 DEFINT a-z: DIM tot(5),tot$(5),player$(5
   ),x(5),score(5)
   ,name$(5),order$(5),finish$(170),WINNER$(20),WINSHOT(20)
   :game=1
50 GOSUB 1520 ' read dart$
60 GOSUB 1290 'title screen
70 GOSUB 1370 ' read finish$
80 GOSUB 1480 ' read order$
90 MODE 1:PEN 1:PAPER 2:CLS
100 REM  *** Next game from here ***
110 GOSUB 1220 'no. of players
120 GOSUB 1040 'players names
130 GOSUB 890 ' 501 ?
140 GOSUB 760 ' Order ?
150 GOSUB 970 'window sizes
160 GOSUB 560 'print screen
170 REM == MAIN LOOP ==
180 n=0:ok=0:win=0:INK 0,24:INK 1,1:INK 2,9:INK 3,17:
    BORDER 13
190 WHILE win=0:SOUND 1,50,10:n=n+1:IF n>players THEN n=1
200 PEN 1:PAPER 0:GOSUB 450:GOSUB 680
210 CLEAR INPUT:INPUT#7,score$:IF score$=""THEN 300
220 le=LEN(score$):IF le>3 THEN SOUND 1,100:GOTO 210
230 score(n)=VAL(score$)
240 IF score(n)=0 OR score(n)>180 THEN SOUND 1,100:GOTO 210
250 IF tot(n)-score(n)=0 THEN win=1:GOTO 270
260 IF tot(n)-score(n)<2 THEN SOUND 1,100:GOTO 210
270 PRINT #n,SPC(4-(LEN(score$)))score$
280 tot(n)=tot(n)-score(n):GOSUB 470
290 GOSUB 720' highscore
300 PEN 3:PAPER 2:GOSUB 450
310 WEND
```

Here, have some money!

Send us your listings and not only do you stand a very good chance of getting in print in your favourite magazine, you could also earn yourself **£100**. Every *Type-In* we publish is paid for, and **£10** is the absolute minimum. So what are you waiting for? Send your tape or disk – and a printout if you can – to ***Type-Ins*, Amstrad Action, Future Publishing Ltd, 4 Queen St, Bath, BA1 1EJ.** And here's a few tips you may find useful:

- Send only your own original unpublished work;
- Use lower-case, not capitals, for variable names;
- REM statements make the program easier to understand;
- Don't use letters that look like numbers as variable names (O and 0, for instance, or l and 1);
- Avoid lengthy multi-statements. Short lines aid debugging;
- Ensure your name and address are on *every* piece of paper, cassette and disk you send.
- State whether you are putting your contribution into the Public Domain. (See page 33 of this issue.)

```
320 REM ### WINNER !!! ###
330 FOR z=400 TO 50 STEP -50:SOUND 1,z+100,10,11:SOUND
   2,z,10,13:NEXT
340 CLS#6:PEN#6,3:PAPER#6,2:CLS#6:PRINT#6,"*WINNER*":PRINT#6
   ," ";player$(n);
350 IF score(n)<=outshot THEN 370
360 outshot=score(n):outshot$=player$(n)
370 winner$(game)=player$(n):winshot(game)=score(n)
380 CLEAR INPUT:LOCATE#6,16,1:PRINT#6,"Another":LOCATE#6,15
   ,2:PRINT#6,"Game (Y/N)?"
390 GOSUB 420:IF a$="N" THEN GOSUB 510
400 game=game+1:GOSUB 1350:GOTO 110
410 REM ## inkey$ ##
420 a$=UPPER$(INKEY$):IF a$=""THEN 420
430 RETURN
440 REM # print player/tot$
450 LOCATE x(n),4:PRINT player$(n):LOCATE x(n),22:PRINT
   tot$(n):RETURN
460 REM # pad tot$
470 tot$(n)=STR$(tot(n)):le=LEN(tot$(n)):IF le<5 THEN
   tot$(n)=SPACE$(5-le)+tot$(n)
480 RETURN
490 REM
500 LOCATE 30,1:PRINT hiscore:LOCATE 36,1:PRINT hiscore$:
   RETURN
510 REM ### WINNERS + OUTSHOTS ###
520 PAPER 1:CLS:PRINT:ZONE 5:PRINT TAB(11)"WINNERS &
   OUTSHOTS":PRINT TAB(11)STRING$(18,218)
530 FOR n=1 TO game:LOCATE 10,n+4:PRINT "GAME";n:LOCATE 19,
   n+4:PRINT winner$(n),winshot(n):NEXT
540 GOSUB 420:GOTO 400
550 REM ## PRINT SCREEN ##
560 PAPER 1:PEN 0:CLS:FOR n=0 TO 3:INK n,0:NEXT:SPEED INK 1
   ,1:BORDER 24,15
570 FOR n=1 TO players:WINDOW #n,x(n),(x(n)+4),6,20:PAPER#n
   ,3:PEN#n,0:CLS#n:PEN 3:PAPER 2:LOCATE x(n),4:PRINT
   player$(n)
580 tot(n)=start:GOSUB 470
590 LOCATE x(n),22:PRINT tot$(n):NEXT
600 WINDOW #6,9,33,24,25:PAPER#6,0:PEN#6,2:CLS#6:WINDOW
   #7,35,40,25,25:PAPER #7,0:PEN#7,1:CLS#7
610 PAPER 2:PEN 0:LOCATE 1,1:PRINT start:LOCATE 1,25:PRINT
   "Game";STR$(game);:PAPER 3
620 FOR n=1 TO 2:LOCATE 13,n:PRINT SPACE$(28):NEXT
630 PEN 2:LOCATE 14,1:PRINT"Highest Score  :":GOSUB 500
640 LOCATE 14,2:PRINT"Highest Outshot:":LOCATE 30,2:PRINT
   outshot:LOCATE 36,2:PRINT outshot$
650 LOCATE 35,24:PRINT"Score ":p=1:PAPER 1:FOR z=4 TO 20
   STEP 4:p=p+1:IF p=4 THEN p=2
660 PEN p:LOCATE 1,z:PRINT dart$:NEXT:RETURN
670 REM ### Check Outshot ###
680 CLS#6:IF tot(n)>170 THEN 700
690 PRINT#6,TAB(8)"--Outshot--":PRINT#6,TAB(13-LEN(finish$
   (tot(n)))/2);finish$(tot(n));
700 RETURN
710 REM ## HIGH SCORE ##
720 IF score(n)<=hiscore THEN 740
730 hiscore=score(n):hiscore$=player$(n):PAPER 3:PEN 2:
   LOCATE 30,1:PRINT SPACE$(11):GOSUB 500
740 RETURN
750 REM ## Order of Play ##
760 IF players=1 THEN 870
770 PEN 1:PAPER 2:CLS:LOCATE 14,2:PRINT "ORDER OF PLAY":
   LOCATE 14,3:PRINT STRING$(13,154)
780 FOR n=1 TO players:LOCATE 15,5+(N*2):PRINT order$(n)
   "  "player$(n):NEXT
790 GOSUB 1160:IF correct=1 THEN FOR z=1 TO 100:NEXT:GOTO
   870
800 FOR n=1 TO players:SOUND 2,100,8
810 LOCATE 4,17:PRINT"pls.enter no. of player to go ";
   order$(n)
820 GOSUB 420:a=ASC(a$):IF A<49 OR A>53 THEN 820
830 a=VAL(a$):IF player$(a)=""THEN SOUND 1,800,12:GOTO 820
840 LOCATE 4,17:PRINT SPACE$(35):LOCATE 4,20:PRINT Order$
   (n);" to play will be ";player$(a)
850 name$(n)=player$(a):player$(a)="":FOR z=1 TO 1200:NEXT
   :LOCATE 4,20:PRINT SPACE$(26):NEXT
860 FOR n=1 TO players:player$(n)=name$(n):name$(n)="":
   NEXT:GOTO 780
870 RETURN
880 REM ## start? ##
890 PAPER 1:PEN 3:CLS:IF start=0 THEN start=501
900 LOCATE 8,12:PRINT"Game";game;"will start at";start;"  "
910 GOSUB 1160:IF correct =1 THEN 950
920 LOCATE 2,18:INPUT"Please enter Start figure";start$:
   LOCATE 2,18:PRINT SPACE$(38)
930 start=VAL(start$):IF start>1001 OR start<101
   THEN LOCATE 29,14:PRINT SPACE$(LEN(start$)):GOTO 920
940 SOUND 1,100,8:GOTO 900
950 RETURN
960 REM
970 IF players=1 THEN x(1)=19:GOTO 1020
980 IF players=2 THEN x(1)=12:x(2)=26:GOTO 1020
990 IF players=3 THEN x(1)=5:x(2)=19:x(3)=33:GOTO 1020
1000 IF players=4 THEN x(1)=5:x(2)=12:x(3)=26:x(4)=33:GOTO
   1020
1010 IF players=5 THEN x(1)=5:x(2)=12:x(3)=19:x(4)=26:x(5)=33
1020 RETURN
1030 REM Players names #
1040 PAPER 3:PEN 1:CLS:IF ok=o THEN 1080
1060 FOR n=1 TO players:LOCATE 12,3+(n*2):PRINT "Player";n
   ;": ";player$(n):NEXT
1070 PAPER 3:PEN 1:GOSUB 1160:IF correct=1 THEN 1140
1080 CLS:FOR n=1 TO players:LOCATE 3,12:PRINT"Enter name of
   player";n
1090 LOCATE 3,14:PRINT"Up to 5 letters..";:INPUT player$(n)
1100 L=LEN(PLAYER$(N)):IF L<1 OR L>5 THEN LOCATE 22,14:
   PRINT SPACE$(L):SOUND 1,800,12:FOR Z=1 TO 200:NEXT:GOTO
   1090
1110 SOUND 1,100,12:GOSUB 1160:LOCATE 22,14:PRINT SPACE$(L)
   :IF correct=0 THEN 1090
1120 l=LEN(player$(n)):IF l<5 THEN player$(n)=player$(n)+
   SPACE$(5-l)
1130 NEXT
1140 RETURN
1150 REM # Correct? #
1160 CORRECT=0:CLEAR INPUT:LOCATE 9,25:PRINT"Is this
   Correct (Y/N) ?";
1170 GOSUB 420
1180 PRINT a$;:IF a$="Y"THEN SOUND 1,100,8:correct=1 ELSE
   SOUND 2,800,10
1190 FOR z=1 TO 200:NEXT:LOCATE 7,25:PRINT SPACE$(26)
1200 RETURN
1210 REM ** No.of Players **
1220 IF players>0 THEN LOCATE 12,7:PRINT "No. of players:"
   ;players:GOSUB 1160:IF correct=1 THEN ok=1:GOTO 1270
1230 LOCATE 8,7:PRINT"Enter no. of players (1-5)"
1240 GOSUB 420:A=ASC(A$):IF a<49 OR a>53 THEN SOUND 2,800,
   10:GOTO 1240
1250 players=a-48:LOCATE 19,13:SOUND 1,100,8:PRINT players
1260 GOSUB 1160:IF correct=0 THEN LOCATE 20,13:PRINT" ":
   GOTO 1240
1270 RETURN
1280 REM * Title Screen *
1290 INK 0,14:INK 1,14:INK 2,14:INK 3,14:INK 4,14:BORDER 14
   :MODE 0:PAPER 0:CLS:PEN 2:PAPER 3:CLEAR INPUT
1300 LOCATE 3,10:PRINT"DART  SCOREBOARD":PAPER 0:PEN 4:FOR
   n=7 TO 11 STEP 4:FOR z=2 TO 17 STEP 5:LOCATE z,n:PRINT
   dart$:NEXT:NEXT
1310 SOUND 1,119,50,15:SOUND 2,95,50,15:SOUND 4,80,50,15:
   SOUND 1,106,100,15:SOUND 2,80,100,15:SOUND 4,63,100,15
1320 PAPER 0:PEN 1:LOCATE 2,22:PRINT"Please Press A Key":
```

```
     INK Ø,24:INK 1,1:INK 2,9:INK 3,17:INK 4,6:BORDER 13:
     GOSUB 42Ø
133Ø RETURN
134Ø REM # CLS #
135Ø WINDOW#4,19,23,11,14:WINDOW#3,16,25,9,16:WINDOW#2,12
     ,29,7,18:WINDOW#1,7,34,4,21:FOR z=4 TO Ø STEP-1:
     PAPER#z,2:CLS#z:SOUND 1,1ØØ-(z*1Ø),8,12:SOUND 6,3ØØ-
     (z*2Ø),8,11:WHILE SQ(1)>127:WEND:NEXT:RETURN
136Ø REM # FINISH$ #
137Ø FOR n=17Ø TO Ø STEP -1:READ finish$(n):NEXT:RETURN
138Ø DATA T.2Ø  T.2Ø  BULL,** NO OUT SHOT **,** NO OUT SHOT **
     ,T.2Ø  T19  BULL,** NO OUT SHOT **,** NO OUT SHOT **
     ,T.2Ø  T.18  BULL,** NO OUT SHOT **,** NO OUT SHOT **
     ,T.2Ø  T.17  BULL,T.2Ø  T.2Ø  D.2Ø,** NO OUT SHOT **
     ,T.18  T.18  BULL,T.19  T.2Ø  D.2Ø
139Ø DATA T.2Ø  T.2Ø  D.18,T.18  T.17  BULL,T.18  T.2Ø  D.2Ø
     ,T.2Ø  T.19  D.18,T.2Ø  T.2Ø  D.16,T.17  T.2Ø  D.2Ø
     ,T.2Ø  T.18  D.18,T.19  T.2Ø  D.16,T.2Ø  T.16  D.2Ø
     ,T.19  T.18  D.18,T.2Ø  T.18  D.16,T.2Ø  T 15  D.2Ø
     ,T.2Ø  T.2Ø  D.12,T.2Ø  T.17  D.16
14ØØ DATA T.2Ø  T.14  D.2Ø,T.2Ø  T.19  D.12,T.2Ø  T.16  D.16
     ,T.19  T.14  D.2Ø,T.2Ø  T.18  D.12,T.19  T.16  D.16
     ,T.2Ø  T.2Ø  D.8,T.19  T.18  D.12,T.18  T.16  D.16
     ,T.19  T.2Ø  D.8,T.2Ø  T.16  D.12,T.17  T.16  D.16
     ,T.2Ø  T.18  D.8,T.19  T.16  D.12
141Ø DATA T.2Ø  T.2Ø  D.4,T.17  T.2Ø  D.8,T.2Ø  T.14  D.12
     ,T.2Ø  T.19  D.4,T.2Ø  T.16  D.8,T.19  T.14  D.12
     ,T.2Ø  T.10  D.16,T.17  T.18  D.8,T.2Ø  S.2Ø  D.2Ø
     ,T.19  T.1Ø  D.16,T.18  T.16  D.8,T.17  T.14  D.12
     ,T.2Ø  S.16  D.2Ø,T.19  S.18  D.2Ø
142Ø DATA T.18  S.2Ø  D.2Ø,T.19  S.16  D.2Ø,T.2Ø  S.2Ø  D.16
     ,T.17  S.2Ø  D.2Ø,T.2Ø  S.18  D.16,T.19  S.2Ø  D.16
     ,T.2Ø  S.16  D.16,T.19  S.18  D.16,T.2Ø  S.14  D.16
     ,T.19  S.16  D.16,T.18  S.18  D.16,T.17  S.2Ø  D.16
     ,T.18  S.16  D.16,T.17  S.18  D.16
143Ø DATA T.2Ø  D.2Ø,T.17  S.16  D.16,T.2Ø  D.19,T.19  D.2Ø
     ,T.2Ø  D.18,T.19  D.19,T.18  D.2Ø,T.19  D.18,T.2Ø  D.16
     ,T.17  D.2Ø,T.18  D.18,T.19  D.16,T.16  D.2Ø,T.17  D.18
     ,T.18  D.16,T.15  D.2Ø,T.2Ø  D.12,T.17  D.16,T.14  D.2Ø
     ,T.19  D.12,T.16  D.16
144Ø DATA T.19  D.11,T.18  D.12,T.19  D.1Ø,T.2Ø  D.8,T.17
     D.12,T.14  D.16,T.19  D.8,T.16  D.12,T.13  D.16,
     T.18  D.8,T.19  D.6,T.12  D.16,T.17  D.8,T.14  D.12,T.11
     D.16,T.16  D.8,T.13  D.12,T.1Ø  D.16,T.15  D.8,S.2Ø
     D.2Ø,S.19  D.2Ø,S.18  D.2Ø
145Ø DATA S.17  D.2Ø,S.16  D.2Ø,S.15  D.2Ø,S.14  D.2Ø,S.13
     D.2Ø,S.2Ø  D.16,S.19  D.16,S.18  D.16,S.17  D.16,S.16
     D.16,S.15  D.16,S.14  D.16,S.13  D.16,S.12  D.16,S.11
     D.16,S.1Ø  D.16,S.9  D.16,D.2Ø,S.7  D.16,D.19
    ,S.5  D.16, D.18,S.3  D.16,D.17
146Ø DATA S.1  D.16,D.16,S.7  D.12,D.15,S.13  D.8
     ,D.14,S.3  D.12,D.13,S.17  D.4,D.12,S.7  D.8
     ,D.11,S.5  D.8,D.1Ø,S.3  D.8,D.9,S.1  D.8
     ,D.8,S.7  D.4,D.7,S.5  D.4,D.6,S.3  D.4,D.5
     ,S.1  D.4,D.4,S.3  D.2,D.3,S.1  D.2,D.2,S.1  D.1
     ,D.1,IMPOSSIBLE,THE WINNER
147Ø REM # ORDER$ #
148Ø FOR n=1 TO 5:READ order$(n):NEXT
149Ø DATA 1st,2nd.3rd.4th.5th
15ØØ RETURN
151Ø REM # DART$ #
152Ø SYMBOL 241,62,119,247,247,247,247,119,62:SYMBOL 242,8
     ,8,137,137,137,137,28,28:SYMBOL 243,124,238,239,239
     ,239,239,238,124:SYMBOL 244,28,28,28,28,28,28,28,28:
     SYMBOL 245,56,56,56,56,56,56,56,56:SYMBOL 246,28,28,8
     ,8,8,8,8,8
153Ø SYMBOL 247,56,56.144.144,144,144,16.16:dart$=CHR$(241)
     +CHR$(242)+CHR$(243)+CHR$(1Ø)+CHR$(8)+CHR$(8)+CHR$(8)+
     CHR$(244)+CHR$(244)+CHR$(245)+CHR$(1Ø)+CHR$(8)+CHR$(8)
     +CHR$(8)+CHR$(246)+CHR$(241)+CHR$(247)
```

Graph Master

This graph drawing program is especially for A-level students who are asked to sketch graphs for equations. Graph Master handles both Cartesian (x,y) and Polar (r, theta) graphs. Unfortunately the equations must be entered into the program-listing, though 3 Cartesian and 3 polar equations can be stored at one time.

The 'Equations' section holds the string-form of each equation, so that they can be shown on-screen.

The 'Functions' section holds the actual calculating code.

Most of the screen is taken up by the graph-paper. The bottom 3 lines is the command area.

The top line of this area shows the commands available in shortened form. Press the capital letter in each to invoke them.

The second line holds the following data:

xI (x Increment): The amount of units on the x axis.

yI (y Increment): As above for the y axis.

col: Current pen colour.

Next is the range of angles (in PI*radians) for the Polar graph.

St (Step): The gap between points plotted.

The bottom line contains the equations under scrutiny.

NB 1) Plotting halted can be altered by pressing **SPACE**

2) **Ax** & **Inc** involve clearing the the graph-paper.

Commands

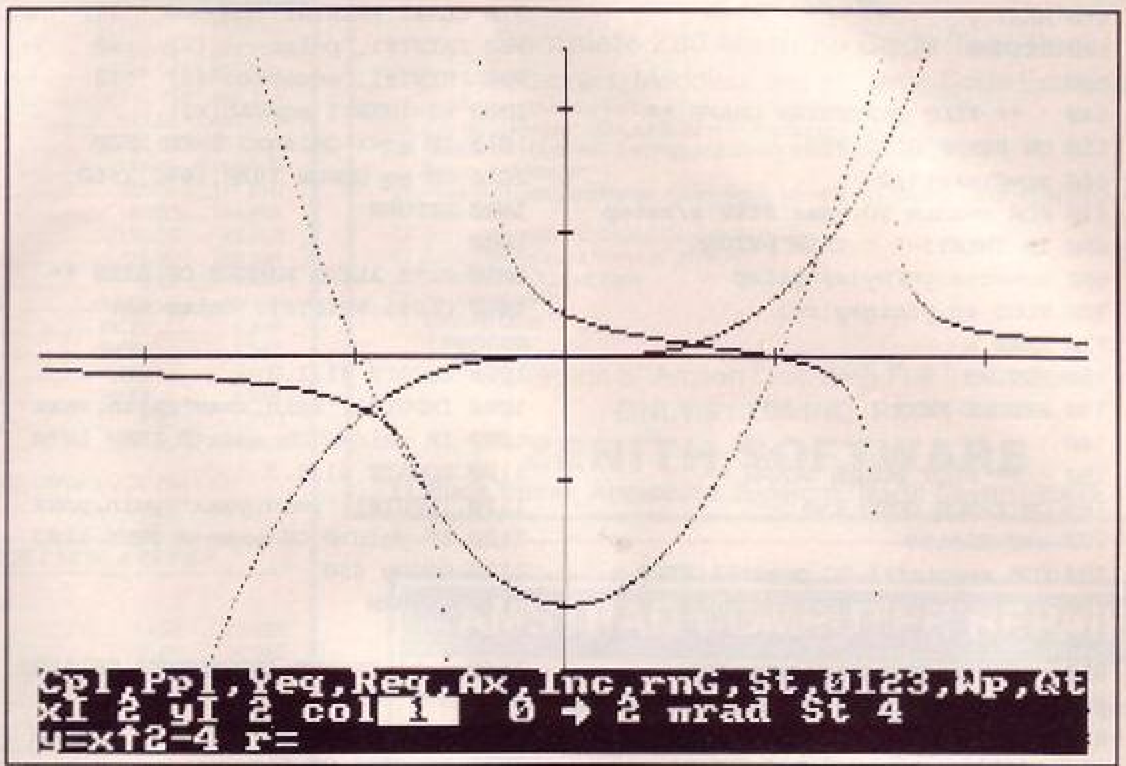
The commands for using the program (just press the capital) are:

- Cpl: Cartesian-plot.
- Ppl: Polar-plot.
- Yeq: Choice of Cartesian equations.
- Req: Choice of Polar equations.
- Ax: To change range of axes.
- Inc: Changing increments of axes.
- rnG: To change range of polar graph. Enter coefficients of PI
- St: Changes plotting step. From 1-9.
- Ø123: Changes pen colour.
- Wp: Wipe.
- Qt: Quit.

```
1Ø ' GRAPH-MASTER
2Ø ' By James Long
3Ø ' Amstrad Action August 1988
4Ø :
5Ø ' ** SET UP **
6Ø MODE 1:BORDER 2
7Ø INK Ø,26:INK 1,Ø:INK 2,2:INK 3,6
8Ø WINDOW#1,1,4Ø,23,25:p$=CHR$(184)
9Ø xmin=-5:xmax=5:ymin=-5:ymax=5:col=1
1ØØ xinc=1:yinc=1:pmin=Ø:pmax=2:st%=4
11Ø GOSUB 3ØØ:GOSUB 45Ø:GOSUB 144Ø
12Ø :
13Ø ' ** MAIN LOOP **
14Ø k$=UPPER$(INKEY$):k=VAL(k$)
15Ø IF k$="" THEN 14Ø
16Ø IF k$="C" THEN GOSUB 65Ø
17Ø IF k$="P" THEN GOSUB 76Ø
18Ø IF k$="Y" THEN GOSUB 88Ø:GOSUB 3ØØ
19Ø IF k$="R" THEN GOSUB 97Ø:GOSUB 3ØØ
2ØØ IF k$="A" THEN GOSUB 1Ø6Ø:GOSUB 3ØØ
21Ø IF k$="I" THEN GOSUB 117Ø:GOSUB 3ØØ
22Ø IF k$="G" THEN GOSUB 126Ø:GOSUB 3ØØ
23Ø IF k$="S" THEN GOSUB 135Ø:GOSUB 3ØØ
```

[continued]

```
240 IF k$="0" OR k>0 AND k<4 THEN
col=k:GOSUB 300
250 IF k$="W" THEN GOSUB 450
260 IF k$="Q" THEN MODE 1:END
270 GOTO 140
280 :
290 ' ** MAIN DISPLAY **
300 PAPER#1,1:CLS#1
310 LOCATE#1,1,1:PEN#1,0
320
PRINT#1,"Cpl,Ppl,Yeq,Req,Ax,Inc,";
330 PRINT#1,"rnG,St,0123,Wp,Qt"
340 LOCATE#1,1,2:PRINT#1,"xI";xinc;
350 PRINT#1,"yI";yinc;"col";
360 PAPER#1,0:PEN#1,col:PRINT#1,col;
370 PAPER#1,1:PEN#1,0
380 PRINT#1," ";pmin;CHR$(243);pmax;
390 PRINT#1,p$"rad St";st%
400 LOCATE#1,1,3:PRINT#1,"y=";y$;
410 PRINT#1," r=";r$
420 RETURN
430 :
440 ' ** DRAW AXES **
450 ORIGIN 0,48,0,640,400,48:CLG
460 xstep=640/(xmax-xmin)
470 ystep=352/(ymax-ymin)
480 xorig=-xmin*xstep:yorig=-
ymin*ystep
490 xe=xorig:ye=yorig
500 IF xorig<320 THEN xe=640-xorig
```



Graph of (x-2)/((x+1)*(x-2))

```
510 IF yorig<176 THEN ye=352-yorig
520 PLOT 0,yorig,1:DRAWR 640,0
530 PLOT xorig,0:DRAWR 0,352
540 FOR x=0 TO xe STEP xstep*xinc
550 PLOT xorig+x,yorig-4:DRAWR 0,8
560 PLOT xorig-x,yorig-4:DRAWR 0,8
570 NEXT x
580 FOR y=0 TO ye STEP ystep*yinc
590 PLOT xorig-4,yorig+y:DRAWR 8,0
600 PLOT xorig-4,yorig-y:DRAWR 8,0
```

New Mode

We have had a number of programs to print double height characters, but this one, from **Gorilla** in Hull, is different. It modifies the screen to have 15 rows instead of the more usual 25.

To switch on a mode, use

|mode, n where n is from 0 to 5. 0-2 clear the screen, 3-5 do not.

|modoff turns the new modes off.

To set the screen to the the new size simply type the following:

`WINDOW #0,1,screenwidth,1,15`

Beware changing the border colour, which can have unpredictable results.

```
10 ' New mode
20 ' By Gorilla
30 ' April 88
40 address=&9000
50 MEMORY address-1
60 FOR a=address TO address+179 STEP 10
70 ch=0
80 FOR b=0 TO 9
90 READ a$
100 z=VAL("&"+a$)
110 POKE A+b,z
120 ch=ch+z
130 NEXT b
140 READ check
150 IF check<>ch THEN PRINT"error"
160 NEXT a
170 CALL address
180 BORDER 10
190 PRINT" |MODE and |MODOFF Now initialised"
200 |MODE,3
210 FOR t=1 TO 1000:NEXT
220 FOR a=0 TO 2:|MODE,a:PRINT"Another mode : mode ";a
230 FOR t=1 TO 1000:NEXT
240 NEXT a
250 DATA EB,11,2D,00,19,E5,11,2D,80,AF, 916
260 DATA ED,52,22,2B,80,E1,3E,80,01,00, 940
270 DATA 01,ED,B1,20,14,2B,56,2B,5E,E5, 962
280 DATA 2A,2B,80,19,EB,E1,73,23,72,23, 997
290 DATA 23,18,EA,00,00,21,37,80,01,3B, 569
300 DATA 80,CD,D1,BC,C9,00,00,00,00,43, 998
310 DATA 80,C3,68,80,C3,4E,80,4D,4F,44, 1180
320 DATA C5,4D,4F,44,4F,46,C6,00,21,A5, 966
330 DATA 80,CD,8B,80,3E,02,CD,69,BB,1E, 1191
340 DATA 19,CD,66,BB,11,00,00,21,00,00, 569
350 DATA CD,C9,BB,C9,FE,01,C0,DD,7E,00, 1588
360 DATA CD,0E,BC,21,9C,80,CD,8B,80,CD, 1401
370 DATA 69,BB,1E,0E,16,5A,CD,66,BB,11, 959
380 DATA 00,00,21,A0,00,CD,C9,BB,C9,01, 988
390 DATA 00,BC,7E,FE,FF,C8,ED,49,04,ED, 1574
400 DATA 79,0C,05,23,18,F2,7F,28,2E,8E, 794
410 DATA 12,03,0F,10,FF,3F,28,2E,8E,26, 636
420 DATA 00,19,1E,00,07,FF,00,00,00,00, 317
```


Would you believe this is a CPC?

```
61Ø NEXT y
62Ø RETURN
63Ø :
64Ø ' ** PLOT CARTESIAN GRAPH **
65Ø ON ERROR GOTO 73Ø
66Ø xc=Ø:s=st%/2
67Ø FOR x=xmin TO xmax STEP s/xstep
68Ø IF INKEY$=" " THEN RETURN
69Ø xc=xc+s:y=FNy(x)*ystep
7ØØ PLOT xc,yorig+y,col
71Ø NEXT x
72Ø RETURN
73Ø RESUME NEXT
74Ø :
75Ø ' ** PLOT POLAR GRAPH **
76Ø ON ERROR GOTO 85Ø
77Ø s=Ø.Ø1*st%
78Ø FOR a=pmin*PI TO pmax*PI STEP s
79Ø IF INKEY$=" " THEN RETURN
8ØØ x=COS(a)*FNr(a)*(xstep/PI)
81Ø y=SIN(a)*FNr(a)*(ystep/PI)
82Ø PLOT xorig,yorig,1:PLOTR x,y,col
83Ø NEXT a
84Ø RETURN
85Ø RESUME NEXT
86Ø :
87Ø ' ** CHOOSE CARTESIAN EQUATION
**
88Ø CLS#1:PRINT#1,"Choose      (1)
";a$
89Ø PRINT#1,"cartesian (2) ";b$
9ØØ PRINT#1,"equation  (3) ";c$
91Ø k$=INKEY$:eq=VAL(k$)
92Ø IF eq<1 OR eq>3 THEN 91Ø
93Ø ON eq GOSUB 155Ø,157Ø,159Ø
94Ø RETURN
95Ø :
96Ø ' ** CHOOSE POLAR EQUATION **
97Ø CLS#1:PRINT#1,"Choose    (1) ";d$
98Ø PRINT#1,"polar     (2) ";e$
99Ø PRINT#1,"equation (3) ";f$
1ØØØ k$=INKEY$:eq=VAL(k$)
1Ø1Ø IF eq<1 OR eq>3 THEN 1ØØØ
1Ø2Ø ON eq GOSUB 162Ø,164Ø,166Ø
1Ø3Ø RETURN
1Ø4Ø :
1Ø5Ø ' ** ALTER RANGES OF AXES **
1Ø6Ø CLS#1:PRINT#1,"Enter new
ranges:"
1Ø7Ø LOCATE #1,1,2
1Ø8Ø INPUT#1,"xmin,xmax";xmin,xmax
1Ø9Ø IF xmin>Ø OR xmax<Ø THEN 1Ø7Ø
11ØØ LOCATE #1,1,3
111Ø INPUT#1,"ymin,ymax";ymin,ymax
112Ø IF ymin>Ø OR ymax<Ø THEN 11ØØ
113Ø GOSUB 45Ø
114Ø RETURN
115Ø :
116Ø ' ** CHANGE INCREMENTS OF AXES
**
117Ø CLS#1
118Ø PRINT#1,"Enter new increments:"
119Ø LOCATE#1,1,2
12ØØ INPUT#1,"xI,yI";xinc,yinc
121Ø IF xinc<=Ø OR yinc<=Ø THEN 119Ø
122Ø GOSUB 45Ø
123Ø RETURN
124Ø :
125Ø ' ** ALTER POLAR GRAPH RANGE **
126Ø CLS#1:PRINT#1,"Enter new range
";
127Ø PRINT#1,"for polar graph:"
128Ø LOCATE#1,1,2
129Ø PRINT#1,"pmin/"p$",pmax/"p$;
13ØØ INPUT#1,pmin,pmax
131Ø IF pmin>=pmax THEN 128Ø
132Ø RETURN
133Ø :
134Ø ' ** CHANGE PLOTTING-STEP **
135Ø CLS#1:PRINT#1,"Enter new ";
136Ø PRINT#1,"plotting-step"
137Ø LOCATE#1,1,2
138Ø INPUT#1,"(1 to 9) ";st%
139Ø IF st%<1 OR st%>9 THEN 137Ø
14ØØ RETURN
141Ø :
142Ø ' ** EQUATIONS **
143Ø ' Cartesian
144Ø a$="(x/2)^3"
145Ø b$="(x-2)/((x+1)*(x-2))"
146Ø c$="x^2-4"
147Ø ' Polar
148Ø d$="a"
149Ø e$="4*(2-sin(3*a))"
15ØØ f$="3*(3+COS(5*a))"
151Ø RETURN
152Ø :
153Ø ' ** FUNCTIONS **
154Ø ' Cartesian
155Ø DEF FNy(x)=(x/2)^3
156Ø y$=a$:RETURN
157Ø DEF FNy(x)=(x-2)/((x+1)*(x-3))
158Ø y$=b$:RETURN
159Ø DEF FNy(x)=x^2-4
16ØØ y$=c$:RETURN
161Ø ' Polar
162Ø DEF FNr(a)=a
163Ø r$=d$:RETURN
164Ø DEF FNr(a)=4*(2-SIN(3*a))
165Ø r$=e$:RETURN
166Ø DEF FNr(a)=3*(3+COS(5*a))
167Ø r$=f$:RETURN
168Ø :
169Ø ' ** THE END **
```

Printer Dump

At last, **William Weir** from Castlehill has come up with a much demanded product – a screen dumping routine for Epson compatible printers. The screen is loaded, either from tape or disk, from within the program.

It works best in Mode 2, but the others are pretty good as well.

```
1 ' Screen load & printer dump program
2 ' By William Weir
3 ' Amstrad Action August 88
4 '
1Ø MODE 2
2Ø DEFINT a-z
3Ø INPUT"Enter screen filename :",file$
4Ø PRINT:PRINT"Border ? : (Y/N)"
5Ø a$=UPPER$(INKEY$)
6Ø IF a$<>"Y" AND a$<>"N" THEN GOTO 5Ø
7Ø PRINT:PRINT"Insert disc or tape & press any key"
8Ø CALL &BB18
9Ø LOAD file$,&CØØØ
1ØØ IF a$="N" THEN 13Ø
11Ø MOVE Ø,Ø:DRAW 639,Ø:DRAW 639,399:DRAW Ø,399:DRAW Ø,Ø
12Ø ' Printer screen dump
13Ø WIDTH 255
14Ø PRINT #8,CHR$(27);"1";CHR$(5);
15Ø PRINT #8,CHR$(27);"A";CHR$(7);
16Ø FOR x=Ø TO 637 STEP 7
17Ø FOR s=Ø TO 3
18Ø PRINT #8,CHR$(27);"*";CHR$(Ø);"d";CHR$(Ø);
19Ø FOR y=Ø TO 99 STEP 2
2ØØ c=TEST(x,y+s*1ØØ)*64+TEST(x+1,y+s*1ØØ)*32
21Ø c=c+TEST(x+2,y+s*1ØØ)*16+TEST(x+3,y+s*1ØØ)*8
22Ø c=c+TEST(x+4,y+s*1ØØ)*4+TEST(x+5,y+s*1ØØ)*2
23Ø c=c+TEST(x+6,y+s*1ØØ)
24Ø PRINT #8,CHR$(c);CHR$(c);
25Ø NEXT y
26Ø PRINT #8,"";
27Ø NEXT s
28Ø PRINT #8
29Ø NEXT x
3ØØ END
```



Not bad for a Basic program

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THE PILGRIM

Quite a month for Amstrad adventurers as the infamous *Bard's Tale* – the first major role-playing game to be converted to CPC format – finally arrives, and the Pilg treats you to a preview of Magnetic Scrolls' *Corruption* and a quick dose of radiation sickness in Abstract Concepts' *Mindfighter.*

At last – *the Bard's Tale!*

Here it is – the first major role-playing game ever to be converted onto the Amstrad machines. Has it been worth waiting for?

Absolutely. The conversion is an excellent one. All the features of the existing disk-only versions have been preserved and the inevitable multi-loads are kept to a minimum.

The story goes like this: the town of Skara Brae is peopled by all sorts of vagabonds, rogues, and bounty-hunters, of whom you are one. Your objective is simple – uncover the secrets of the town, penetrate the dungeons beneath its surface, and survive long enough to come back with the goods.

To do this, you form a 'party' of companions – a group of fellow adventurers, each of whom possesses certain attributes (strength and intelligence, to name but two) who accompany you throughout the game (or until they get killed). You can create as many parties as you like, featuring different combinations of skills and attributes, and save them to tape or disk for future use. It's this creation and development of parties that sets *Bard's Tale* apart from the normal, non-role-playing adventure.

As you triumph over obstacle after obstacle your characters develop new skills and amass greater fortunes that can be used to overcome the opposition and purchase services and weapons from other computer controlled characters. This adds tremendous lasting interest to the game, which otherwise might lack complexity and variety of gameplay.



● Electronic Arts present *The Bard's Tale*

The *Bard's Tale* arrived just too late to give it the *AA* treatment in this issue. Stand by for the definitive colour review next month!.

CORRUPTION

PILGRIM PREVIEW

Magnetic Scrolls/
Rainbird ● £19.95 (6128 only)

With this game the battle for Britain's Number One spot takes a crucial – but let's hope not irrevocable – turn. The Pilgrim hereby nominates Magnetic Scrolls for the privileged position at the forefront of the Pilgrim's Trophy Shelf, displacing Level 9. They are the first company ever to do so, and they now rank alongside their American counterparts Infocom.



The truth is that Level 9 have been hanging in there by their bootstraps for some time now, and I have felt they were successful in doing so only because of the strength of their older games. None of their recent titles has really succeeded in getting my adrenalin going. Don't get me wrong – both *Gnome Ranger* and *Knight Orc* are top-league games, but they remain slightly old-fashioned and contrived in their storylines.

Until recently much the same objections could be made about Magnetic Scrolls. *The Pawn* is simply a collection of beautiful pictures with one or two excellent puzzles and a lot of nonsense. *Guild of Thieves* was a tremendous improvement and a much more enjoyable game than their last release, *Jinxter*, which never lived up to its promise as a story, however good its graphics and programming.

But *Corruption* is without doubt in a different league. To start with it uses characters much more effectively than any previous game. Second, it's a no-nonsense plot set in the real world. Third, the graphics are superb because they concentrate on the people in the story and actually make them look like people with personalities.

Finally there's a more subtle point to make. Many adventures have powerful parsers, but they are simply grafted onto feeble plots – so you can have a multi-command input facility but can solve the game using verb-noun inputs. Alternatively you might be able to interact with characters, but the game only requires

Jinxter Arrives

The 6128 version of *Jinxter* is now in the shops. Despite some of the rude things I've said about it, you have to remember that at the top end of the market you can be rude about a product and yet still acknowledge that it is a powerful piece of programming. In addition, with sophisticated software what is poison to the Pilg may be meat to you.

My own feelings about *Jinxter* are that the plot is somewhat silly and the Guardians should jump off a high cliff... but those are my feelings only, and it remains a good example of programming and presentation, with some very tough puzzles.

Jinxter costs £19.99 and remember – it's available only on the 6128.



you to make them move about and get/drop objects. In *Corruption* the programming, the plot and the pictures all work together to produce a solid, challenging experience.

The plot is simple. You have been made a partner in a firm of stockbrokers in the City. You are right chuffed. By lunchtime you are in the hands of the police. Shortly afterwards thou art sentenced for serious crimes against humanity, to wit, insider dealing.

For those who have the good fortune to know nothing about the murky world of high finance, insider dealing means buying and selling shares in a company about which you have privileged information.

It should be emphasised, however, that although the context of the game is Big City Business, you don't need to be a businessman to enjoy it. Your task is simply to avoid the police, find out what's going on and bring the real culprits to justice.

The game starts at 9 o'clock in the morning: every move lasts a minute in gameworld time, and the police are due at midday. Thrilling stuff.

We'll bring you a full review of the CPC version just as soon as it appears. Look forward to it...

PILGRIM PREVIEW

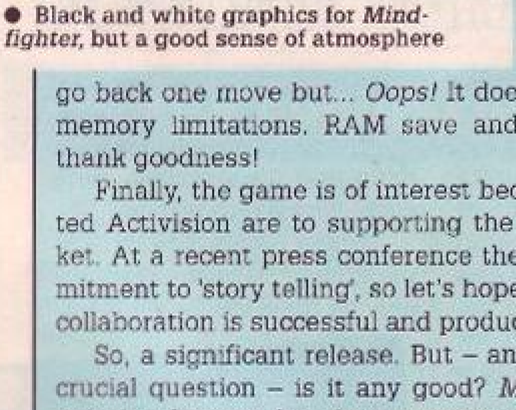
MINDFIGHTER

Abstract Concepts/ Activision



Very interesting, very interesting indeed. First off it's produced by Fergus McNeill and Anna Popkess, with whom many readers – especially those who enjoyed the Delta 4 satirical adventures – are already familiar. Anna is a new recruit to the Delta 4 entourage and has formed her own company, Abstract Concepts, who in turn have produced *Mindfighter*.

Second, the game is programmed using a new authoring system called *SWAN*. Delta 4 rose to fame by making clever use of *The Quill* in their games *Robin of Sherlock*, *The Boggit*, and others. So it may come as no surprise to hear that *SWAN* was produced with not a little help from Tim Gilberts of Gilsoft.



● Black and white graphics for *Mindfighter*, but a good sense of atmosphere

SWAN does indeed have several Quill-like features, which we'll discuss later, but it adds a whole lot more including interactive characters and an improved parser. It also features an icon-driven system menu for loading, saving, and so on. There's also an *Oops!* command to go back one move but... *Oops!* It doesn't work on the 464 due to memory limitations. RAM save and restore are also featured, thank goodness!

Finally, the game is of interest because it shows how committed Activision are to supporting the adventure side of the market. At a recent press conference the company affirmed its commitment to 'story telling', so let's hope that the Abstract Concepts collaboration is successful and produces many another package.

So, a significant release. But – and here comes the cruel and crucial question – is it any good? *Mindfighter* has some disappointing features but does emerge as a challenging game with a powerful scenario despite its drawbacks. Let's grit our teeth and deal with the drawbacks first as we take the part of Robin, a boy with psychic powers stranded in post-holocaust Southampton.

SWAN, although a new system, is still rather primitive compared to the Level 9 and Magnetic Scrolls programming environments. For example, you're told about a window in a ruined building and enter EXAMINE WINDOW, whereupon the program replies ROBIN CAN'T EXAMINE THAT. Nor can he examine the building, or indeed many of the other objects you encounter during your travels.

These objects are, of course, part of the scenery. Level 9 gets round this by saying something like WINDOW – THAT'S JUST SCENERY and Magnetic Scrolls might say REALLY, IT'S POINTLESS MESSING AROUND WITH THE SCENERY, but SWAN just puts its foot down. The truth dawns if you enter EXAMINE QWRT, whereupon the program replies ROBIN CAN'T EXAMINE THAT again. Of course he can't, because it doesn't exist. The sad truth is that the program, like many other older systems, doesn't tell you which words it doesn't understand.

This may seem like a niggling point, but it's not at all. To start with, it can make certain puzzles very difficult to approach because there is always a doubt as to whether ROBIN COULDN'T DO THAT refers to the fact that you're tackling the problem in the wrong way, or whether the program doesn't understand the words used. The only time SWAN admits to ignorance is if you completely baffle it with unrecognisable words.

Secondly, the YOU CAN'T DO THAT sort of message is absolute death to atmosphere in a good adventure. Suddenly you're dragged out of the world of make-believe and having your face slapped by the parser. That we can do without. Let's hope SWAN gets updated and made a little friendlier in future.

The other drawback about *Mindfighter* is the map. Relationships between locations are often illogical in real-world terms – it's very difficult to go round in a circle by continually moving EAST in real life (unless you're circumnavigating the world), but you can do it in *Mindfighter*. Actually, the mapping gets quite enjoyable, but at first you can get confused and frustrated unless you get the pencils out – and even then you end up with a very strange looking map indeed!

YELLOW PERIL

So what about the plot? Robin the boy wonder falls into a trance and finds himself in a world falling apart. Ruined buildings, poisonous gas, desperate, starving people – he has to deal with all of these to find out what happened to reduce one of Britain's proudest civic centres to dust and ashes.

Robin's a bit of a weed, actually. He starts the game in a terrible state and dies easily from such minor things as a sword through the heart, radiation sickness and hordes of rabid foxes. He even has to sleep occasionally, whereupon time passes as in the real world.

Sooner or later you realise that these Chinese-looking people are better off than you and your fellow citizens. Dig up the truth and you may be able to return to the present day and take remedial action. Fail, and – well, as usual the consequences are globally unhealthy.

Mindfighter has a strong scenario and despite the drawbacks remains a challenging and enjoyable game, if a little frustrating at times. Since the Infocoms and Magnetic Scrolls of this world are abandoning the Amstrad market (the 464 market in particular), games like this on SWAN-type systems may represent the future of the 8-bit – and particularly the Amstrad 8-bit – adventure market. If that's the case, the future looks OK to me...

ATMOSPHERE	**82%**
INTERACTION	**80%**
CHALLENGE	**85%**
OVERALL	**84%**

Pilgrim Post

Loony Calling

Dearest Pilg,

After flicking through the Jan '88 issue (looking vainly for *Gnome Ranger* help) I came across Simon Brann's 'Who are you?' insult. I thought everyone knew – tell Simon to look in the centre of 'PlayGnome' - and there you are in full glory...

I think that your part of the mag is the best and (grovel grovel) I'm your greatest fan. Please forgive the crayon - they don't allow sharp things where I am. Love from

Sam King, The resident Loony.

OK, I forgive the crayon, but nothing else...

Rigel rage

Could you perhaps come up with a poke to get rid of the bug in part 2 of *Rigel's Revenge?* Upon loading the saved data from part one, up pops the message, 'The mesh was about 2 foot square'. Typing R tells you the same. If you remove your goggles, the location description is printed, but along with the message that you cannot see anything, so no movement is possible. This should not be the case as the loading screen says a new day has dawned. Failing this, please print Bulldog Software's address so I can get a replacement.

Andrew MacDonald, Eccleshall

Aha! Welcome to the 'Aaghghg! I've discovered another bug in RR' Club. You are member number 50059. I'm afraid that I don't know of a poke to help you out and as far as I know Mastertronic have no plans to release a debugged version, though if anyone knows differently it would be good to hear from them. Whatever it was we did to Rigel, it must have been pretty bad for him to seek revenge on this scale. Still, he wanted revenge, and got it...

Adventure Programming Series

Unfortunately I had never read your section of *Amstrad Action* until I was flicking through Issue 31 to find the type-ins when I came across your new adventure programming series. Being curious, I decided to have a quick read which led to me typing in your adventure. Issue 32 – Part 2 of your adventure was the first thing I read and the first thing I typed in, but on RUNning it, it doesn't seem to work. I can't find any bugs... Please help...

You need to type in ALL the modules printed. That's why we offer to send Pilgs the complete listing to make up for any instalments they've missed. Get yours by writing to Pilg Programming Offer, 4 Queen Street, Bath, BA1 1EJ. We're taking a break this month in the programming course while we dispatch copies of the listing to all those who've written in. Check out the next instalment of the DIY Adventure game in Issue 36.

Ashkeron Angst

I have patiently perused about 18 months of *Lords and Ladies of Adventure* before writing to you, but to no avail. I just cannot get into the castle in Ashkeron.

Rick Bilson, Staines *(letter heavily edited for length, with much cutting of desperate pleas for help and groans of despair)*

Well, Rick, I'm not absolutely sure I can help you as my copy of Ashkeron has gone missing and it's a long, long time since I played it. However, I do distinctly remember hitching a lift into the castle on the wagon – or some such trick. Timing is quite important. Persevere, and in the meantime perhaps someone else will send in the exact input to put you out of your misery.

Home groan

I am writing in confusion at the situation of small mail order adventure marketing firms getting reviews in your section in *Amstrad Action*. We have sent out many review copies, but hardly get a mention. It seems that software from small, seemingly insignificant adventure houses is just not getting a look in.

What matters most, the packaging or the content? We provide a cheaper, agreeably less professional alternative to the large software houses' fancy packaging and glossy adverts, but our games are affordable and still enjoyable in concept.

We sent in four such adventures many moons ago and have some new adventures almost ready to send out for review. However, we would be wasting our time if your section won't review them. Surely the proven formula is to have a balance of full priced, budget, and mail-order games?

F.J. Neary, Visual Dimensions, 59 Nunnery Lane, York.

Much as I would like to dismiss Mr Neary's letter, I'm afraid he does have a point. The sad truth is that recently The Pilg *hasn't given much coverage to homebrew adventures. The problem is simply one of time and space. To start with, I receive literally dozens of homebrew games. I do my best to keep them in order and, whenever I have a spare moment, to look at them. Such spare moments are however increasingly difficult to come by! However, all this is whingeing on my part, so I'll simply say this: please don't give up sending me your products, and I will do my utmost to give them more coverage.*

One thing that would help us all: a lot of people (and I mean a LOT of people) send in half-finished games, or games that they have written for fun but don't wish to sell to others, and ask me for my opinions. I only review software in this column that is available to other Pilgs – whether it be at £1.99 or £24.99. I appreciate your sending in your efforts, but if there's no sale then I'm wasting my time (and therefore indirectly your space on these pages) by looking at them.

Clue Sniffing with the Pilgrim!

The Pilg stirs up another heady brew this month with a whole cauldron-full of tips that should go straight to the heart of the problem. Shake your head, take one last look around the Goblins' Dungeon (if there's still anyone in there), avail yourself of one huge sniff of the following and...hey presto! You're free!

Don't forget that these clues are almost all sent in by valiant adventurers like yourselves, so why not join them? Send in your clues to The Clue Pot, *4 Queen Street, Bath, BA1 1EJ.*

This month's clues come to you courtesy of the following Honorary Pilgs:

Andre Nieuwenhuize of Christchurch, New Zealand
Eric Coulin, Australia
Stuart Whyte, Altrincham
Ian Houghton, Wigan
David Liddell, Bellshill
Robert Weir, Gorebridge

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HORDES OF THE MOUNTAIN KING

(Knight Orc Part 3)
Read the inscription
Find the book and read it.
Kiss the frog (of course).
Follow the ghost, get the bones, and drop them.
Follow the druid.
There's a note on the toilet door.

LURKING HORROR

To get the master key from the hacker, first ask him about his keys (to reveal the presence of the masterkey), then cook the Chinese food for him (4.00 minutes in the microwave) and after giving it to him ask him for the master key. He'll lend it to you.
The access hatch in the tomb can be unlocked with the master key.
Get past the rats by turning the pressure release valve twice with the crowbar - once before they get to you and once after they've arrived.
To get past the maintenance man, you must search the infinite corridor until you find a glass cabinet. Smash the cabinet with the crowbar and you will find a fire axe. Get the axe and the floor wax which is also in the infinite corridor and then go to the power cord that is connected to the floor waxer. Open the container of wax and pour it onto the floor. Then cut the power cord...

SEASTALKER

Screw relay in space.
When the survival unit is installed press test and examine needle.
Tell doc to analyse needle and then arrest Bill - he is the real traitor.
When Bill runs you will go to the office. Examine docking tank control panel and close the door.
Get the dart, bazooka, and sensitive scanner installed and then launch.
Go SE to get the snark.
Always go behind the sea cat, away from the rockets.

WORM IN PARADISE

Stand on beach and eat apple.
Play in casino to make money.

Cracking The Eden Transport System in The Worm in Paradise

You have to master this to complete the game - just think of it as a dartboard with the colours radiating from the centre. Moving North or South changes ring, and moving East or West changes colour. The colours represent numbers as follows:

Black	**0**
Brown	**1**
Red	**2**
Orange	**3**
Yellow	**4**
Green	**5**
Blue	**6**
Violet	**7**
Grey	**8**
White	**9.**

Examine the socialist's brooch and you will be given a colour combination. The first number represents the ET system number (of which there are three). The other colours make up a six digit number and refer to an address. There are 13 North/South locations on the ring and each corresponds to a different step size. The sequence goes as follows:
1,3,27,81,243,729,2187,6561,19683,59049,177147,531441,369268. You start off on step size one and can move along to the others by moving North and South. Now think of 'west' as 'subtract' and 'east' as 'add'. Moving east would add that location's step size to your present value, moving west would subtract in the same way. So by carefully adding and subtracting appropriate values you will eventually arrive at the address on the brooch. Remember to write down the path taken, because you'll need it to find the way out again!

Examine socialist and give his wallet to the Police for reward, but keep the brooch.
Go to your habihome and say ON.

RIGELS REVENGE

To get past the Robotank give the dog the bone, go west then south. The dogs are chased and you can go SW past the tank.

SPY TREK

Give doll to little girl.
Chop down goal post for gondola.

The Lords and Ladies of Adventure

Well, what can we say? Every month kind-hearted people write in with help for the rest of us wallies. And are we grateful? Do we reward them with everlasting fame and adoration? No, we just phone them up, write to them, pester them, badger them, and generally drive them up the wall with our requests for help...

But here they are again, and the reason's simple - offering help to other adventurers is one of the best ways of making friends around the world. What more could you want, except a postcard and a post-box to pop it into, addressed to: The Pilgrim, 4 Queen Street, Bath, BA1 1EJ. Jump to it.

Forest at Worlds End, Gremlins, Heroes of Karn, Midnshadow, Message from Andromeda, Never Ending Story, Red Hawk, Spy Trek, Seabase Delta, SubSunk, Warlord, Spellbound, Knight Tyme, Storm Bringer.
Robert Weir, 87 Burnside Rd, Gorebridge, Midlothian, EH23 4ET

Beerhunter, Heroes of Karn, Never Ending Story, plus limited help on Redhawk and Rigels Revenge.
Andrew MacDonald, Brookhouse Farm, Eccleshall, Staffs, ST21 6NE

Kentilla, The Big Sleaze, Hobbit, Forest at the Worlds End
David Liddell, 91 Orbiston Drive, Bellshill, ML4 2LX

Star Wreck, Lurking Horror, Pawn, Khobyashi Naru, Gems of Stradus, Forest at Worlds End, Jewels of Babylon, Message from Andromeda, Heroes of Karn, Aftershock, Warlord, Red Moon, Snowball, Dungeon Adventure, Adventure Quest, Hobbit, Necris Dome, Souls of Darkon, Lords of Time, Theseus, Robin of Sherlock, Bugsy, Mordens Quest, Questprobe III, Very Big Cave Adventure, Boggit, Dodgy Geezers, Redhawk, Sorcerer, Hitchhikers Guide, Nythyhel, Brawn Free, Arnold Blackwood Trilogy, Fantasia Diamond, Espionage Island, Mindshadow, Inca Curse, Bored of the Rings, Emerald Isle, Spytrek, SubSunk, Hunchback, Seabase Delta, Never Ending Story, Knight Tyme, Kentilla, Apache gold, Escape From Khosima, Circus, Sphinx Adventure, Woodbury End, Imagination, Stolen Lamp, Gremlins, Clasic Adventure, Dungeons Amethysts, Alchemists 'n' Everything, Beer Hunter, Zork 1, Dracula, Colossal Adventure, Tomb of Kuslak, The Mural, Rebel Planet, The Forth Protocol, Enchanter, Lord of the Rings Pt 2.
Darren Stephens, 0793 73490

Seastalker, Hitchhikers Guide to the Galaxy, Lurking Horror, Leather Goddesses of Phobos, Souls of Darkon, Red Moon, SubSunk, Kaiser, Seabase Delta, Warlord, Heroes of Karn, Message from Andromeda, Forest at the Worlds End, Classic Adventure, Worm in Paradise, DAA'n'Everything, Price of Magik, Return to Eden, Fantasia Diamond, Wildbunch and Experience. (Penpals also wanted).
Stuart Whyte, 53 Ridgeway Road, The Gables, Timperley, Altrincham

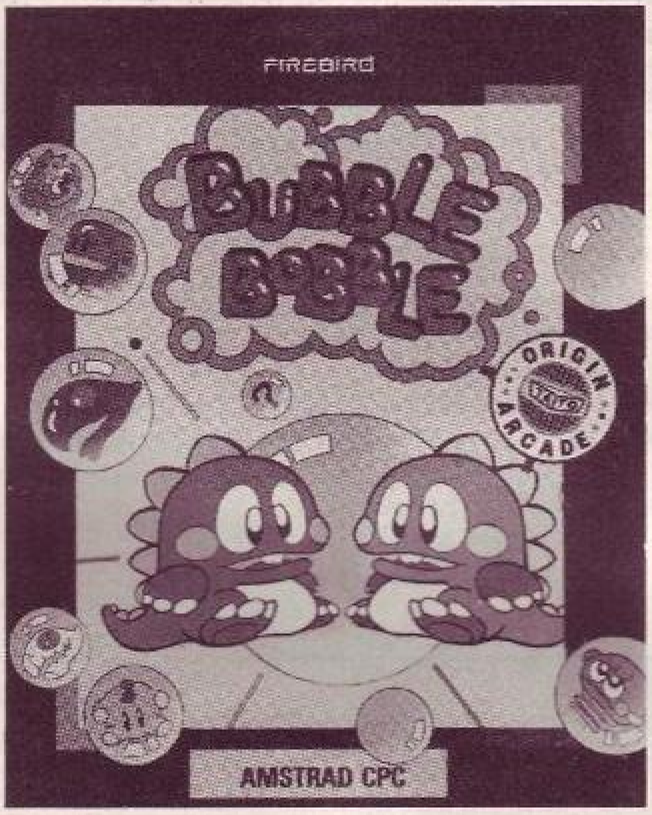
CHEAT MODE

You might not like his haircut but you've got to admire his stamina. Here comes Gary Barrett with another sizzling selection of your tips, pokes and game-busting ploys. And remember, there's a reward at stake – the best ones earn an entire issue's *Raves* AND the *Mastergame!* So send your latest gem to: Cheat Mode, *Amstrad Action*, 4 Queen Street, Bath BA1 1EJ.

Bubble Bobble

Phil Howard of Mapperley gives infinite lives to the bubble blowing brontosauri. **(Method 1)**

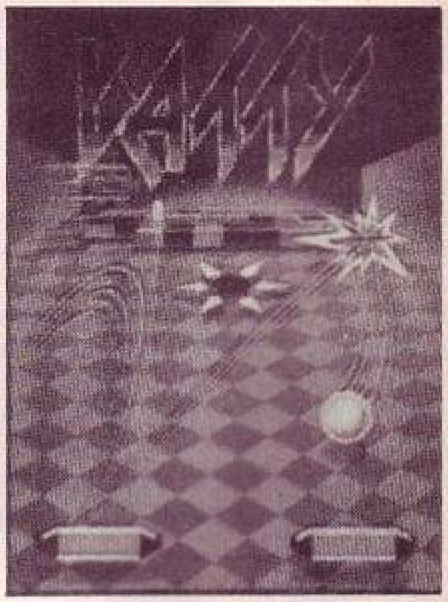
```
1 ' Bubble Bobble - tape
2 ' by Phil Howard
3 ' Amstrad Action August 88
1Ø DATA c5,e5,f5,Ø6,f6,ed
2Ø DATA 78,fe,ØØ,28,Ø6,f1
3Ø DATA e1,c1,c3,ØØ,ØØ,f3
4Ø DATA 2a,5f,ØØ,22,39,ØØ
5Ø DATA 21,84,ØØ,22,6Ø,39
6Ø DATA 18,eb,cd,4c,3d,2a
7Ø DATA 39,ØØ,22,5f,ØØ,f3
8Ø DATA 21,5Ø,ØØ,22,39,ØØ
9Ø DATA fb,c3,ØØ,3c,cd,ØØ
1ØØ DATA 4Ø,21,8e,ØØ,22,c1
11Ø DATA 3e,c9,cd,c9,Ø1,3e
12Ø DATA a7,32,26,6d,32,87
13Ø DATA 6d,c9
14Ø MEMORY &3ØØØ:y=Ø
15Ø FOR x=&5Ø TO &99
16Ø READ a$:a=VAL("&"+a$)
17Ø POKE x,a:y=y+a:NEXT
18Ø IF y<>&1C85 THEN 21Ø
19Ø LOAD"bubble1
2ØØ CALL &7Ø
21Ø PRINT"Data Error"
```



Batty

William Brown of Glasgow puts the Hacker listing of issue 3Ø to good use on the tape version of Elite's *Hitpack*. It gives infinite lives and slows down everything but the bat. **(Method 1)**

```
1 ' Batty - tape
2 ' William Brown
3 ' Amstrad Action July 88
1Ø MODE Ø:BORDER Ø
2Ø OPENOUT"D":MEMORY 2991
3Ø FOR n=Ø TO 15
4Ø READ a:INK n,a
5Ø NEXT
6Ø LOAD"!PIC",&CØØØ
7Ø LOAD"!A",&4268
8Ø LOAD"!B",&BBØ
9Ø POKE &426A,176
1ØØ POKE &426B,11
11Ø POKE &4518,Ø:'inf lives
12Ø POKE &7581,Ø:'slow down
13Ø CALL &4268
14Ø DATA ØØ,26,13,1Ø,11,Ø2
15Ø DATA Ø3,Ø6,15,Ø9,18,17
16Ø DATA 24,2Ø,Ø8,Ø1
```



POKE METHODS ON TAPE

Here's how to input most *Cheat Mode* tape pokes – the instructions for each poke tell you which of the two to use. 664 and 6128 owners: first type |tape.

METHOD 1

Rewind the game tape to the beginning, type in the poke listing and then type RUN and press the Enter key. (Don't use the key marked CTRL or Control, or the poke won't work.) Press the Play key on the cassette deck, then any key on the main keyboard - spacebar does nicely. The tape should now play through as normal.

METHOD 2

Skip the first bit of the game program. To do this, rewind the game tape to the beginning; type in the listing; now type CAT and press Enter. Start the tape by pressing Play and then any key. Soon you'll see the message: "Found something Block 1". It doesn't matter what the something is, and it varies from game to game. If the *Cheat Mode* instructions just tell you to skip the first block, stop the tape here.

If the instructions tell you to skip things, stop the tape when the "Found" message comes up for the last thing you're trying to skip.

Once you've stopped the tape, press Escape, type RUN and press Enter. Now press Play on the tapedeck and any key on the keyboard to start the tape.

Gothik

Phil Howard alters all the useless and irritating potions for healing potions in Firebird's game of wizardly re-building. (Method 1)

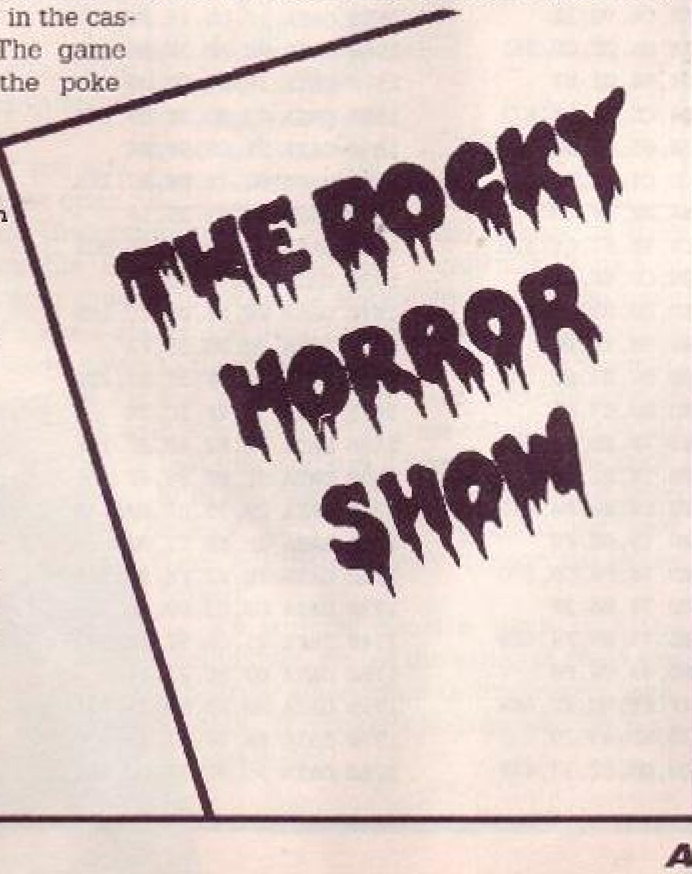
```
1 ' Gothik - tape
2 ' by Phil Howard
3 ' Amstrad Action August 88
1Ø DATA c5,e5,f5,Ø6,f6,ed
2Ø DATA 78,fe,ØØ,28,Ø6,f1
3Ø DATA e1,c1,c3,ØØ,ØØ,f3
4Ø DATA 2a,Øf,bf,22,39,ØØ
5Ø DATA 21,34,bf,22,92,Ø1
6Ø DATA 18,eb,cd,4c,3f,2a
7Ø DATA 39,ØØ,22,Øf,bf,f3
8Ø DATA 21,ØØ,bf,22,39,ØØ
9Ø DATA fb,c3,ØØ,3e,21,6c
1ØØ DATA 7b,36,c3,23,36,42
11Ø DATA 23,36,bf,c3,a8,61
12Ø DATA fe,Ø5,28,1b,fe,Ø7
13Ø DATA 28,17,fe,Ø9,28,13
14Ø DATA fe,Ød,28,Øf,fe,18
15Ø DATA 28,Øb,fe,19,28,Ø7
16Ø DATA c5,21,1Ø,7f,c3,7Ø
17Ø DATA 7b,3e,16,4f,18,f4
18Ø MEMORY &3ØØØ:y=Ø
19Ø FOR x=&BFØØ TO &BF65
2ØØ READ a$:a=VAL("&"+a$)
21Ø POKE x,a:y=y+a:NEXT
22Ø IF y<>&2758 THEN 25Ø
23Ø LOAD"gothik1"
24Ø CALL &BF2Ø
25Ø PRINT"Data Error"
```



Rocky Horror

Johnny and Kim Olsen of Denmark reveal this poke for infinite freezer and time in CRL's game. (It's neither Method 1 nor Method 2: type in the poke and type RUN, then put the Rocky Horror tape in the cassette deck and type RUN". The game then loads and runs with the poke active.)

```
1 ' Rocky Horror - tape
2 ' by Johnny and Kim Olsen
3 ' Amstrad Action Aug 88
1Ø FOR x=&be8Ø TO &bea3
2Ø READ a$
3Ø POKE x,val("&"+a$):NEXT
4Ø POKE &bd37,&c3
5Ø POKE &bd38,&8Ø
6Ø POKE &bd39,&be
7Ø DATA 3e,cf,21,88,88,32
8Ø DATA 37,bd,22,38,bd,21
9Ø DATA 94,be,22,f3,ac,c3
1ØØ DATA e6,ac,af,32,44,Øc
11Ø DATA 32,4f,Øc,32,58,Øc
12Ø DATA 32,68,Øc,c3,5a,97
13Ø END
```



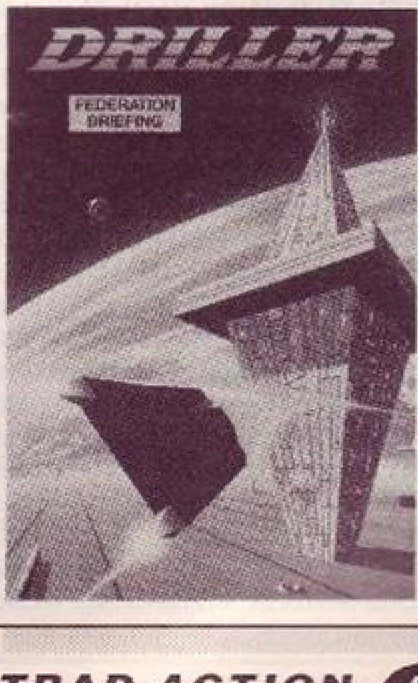
Driller

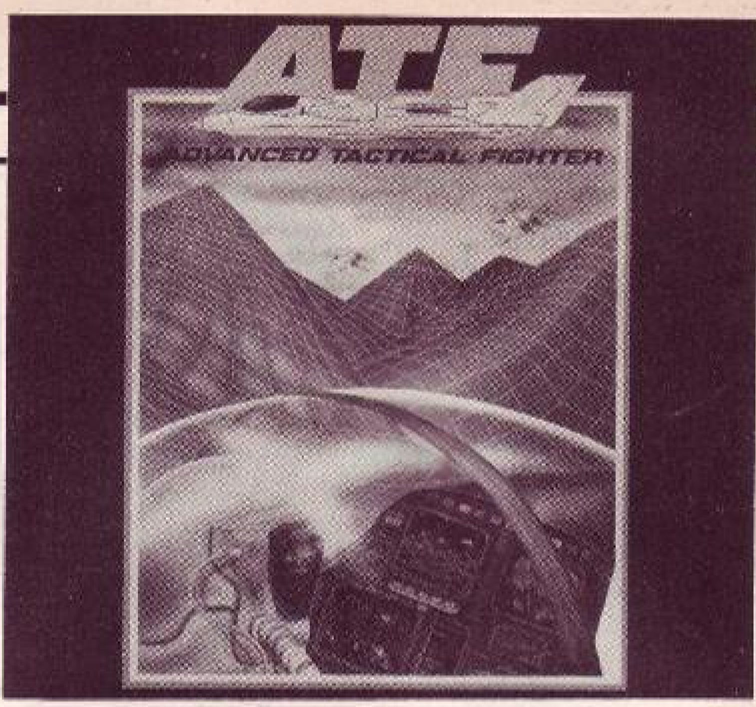
David and **Sarah Durrent** of Peterborough present a list of the coordinates that the gas rigs should be teleported to in Incentive's *Mastergame*. If the gas doesn't clear at this point then rotate 9Ø° and try again. They also offer instructions on how to complete the final sector, Trachyte.

Sector	X	Y
Alabaster	4496	4Ø96
Amethyst	64ØØ	6Ø5Ø
Aquamarine	512Ø	2896
Basalt	Ø93Ø	224Ø
Beryl	71Ø4	3512
Diamond	4Ø96	3472
Emerald	3746	4Ø96
Graphite	168Ø	6336
Lapis Laz	4Ø96	3746
Malachite	5952	5Ø26
Niccolite	Ø512	1698
Obsidian	6656	63Ø6
Ochre	18Ø8	672Ø
Opal	7394	7744
Quartz	2768	1792
Ruby	3746	255Ø
Topaz	3Ø77	131Ø
Trachyte	4496	6912

Trachyte

Move along the force field at a 45° angle until the sound changes. Face the forcefield and move through it. Shoot the bottom concentrater crystal, the central crystal and then the right crystal so that only the blue pyramid to the right remains. Shoot the floor to destroy the generator and then you can position the drilling rig.





ATF

Digital Integration's *Mastergame* gets hacked by **Nicola Gavazzeni** of Italy. You get the option of infinite lives, no time limit to jam the SAM missiles and no fighters attacking from behind. (Method 2: skip past the files called ATF and LOADER)

```
1 ' ATF - Tape
2 ' by Nicola Gavazzeni  3 '
Amstrad Action Aug 88
1Ø DATA F3,CD,AA,9F
2Ø DATA CD,57,9E,DD,5A8
3Ø DATA 21,B3,9A,21
4Ø DATA ØØ,CØ,Ø6,C8,31D
5Ø DATA DD,75,ØØ,DD
6Ø DATA 23,DD,74,ØØ,3A3
7Ø DATA DD,23,7C,C6
8Ø DATA Ø8,67,3Ø,Ø4,2E5
9Ø DATA 11,5Ø,CØ,19
1ØØ DATA 1Ø,EA,31,B3,318
11Ø DATA 9A,3E,1Ø,Ø6
12Ø DATA F6,ED,79,26,37Ø
13Ø DATA 32,Ø6,9C,3E
14Ø DATA 16,CD,F9,9D,38B
15Ø DATA 3Ø,F5,3E,C6
16Ø DATA B8,3Ø,FØ,25,426
17Ø DATA 2Ø,EF,Ø6,C9
18Ø DATA CD,FD,9D,3Ø,475
19Ø DATA E6,78,FE,D4
2ØØ DATA 3Ø,F4,CD,FD,61E
21Ø DATA 9D,3Ø,DC,ØØ
22Ø DATA DD,21,59,9C,39C
23Ø DATA 11,Ø2,ØØ,ED
24Ø DATA 5F,Ø6,12,2E,1A5
25Ø DATA Ø1,78,Ø6,D7
26Ø DATA CD,F9,9D,D2,48B
27Ø DATA 5F,9E,3E,E7
28Ø DATA B8,CB,15,3E,3F8
29Ø DATA ØØ,ØØ,3E,15
3ØØ DATA D2,58,9D,3A,254
31Ø DATA 58,9C,85,32
32Ø DATA 58,9C,65,3A,33E
33Ø DATA C8,9F,AA,AB
34Ø DATA DD,AC,DD,AD,5CF
35Ø DATA AD,DD,77,ØØ
36Ø DATA Ø6,Ø9,CB,63,33E
37Ø DATA 28,ØD,3A,C8
38Ø DATA 9F,C6,52,83,371
39Ø DATA 92,32,C8,9F
4ØØ DATA Ø5,Ø5,Ø5,3A,274
41Ø DATA C8,9F,C6,6E
42Ø DATA 32,C8,9F,DD,511
43Ø DATA 23,1B,7A,B3
44Ø DATA C2,55,9D,C3,3E2
45Ø DATA BA,9D,11,E7
46Ø DATA 9D,ED,53,A6,4D2
47Ø DATA 9D,81,Ø6,Ø1
48Ø DATA D1,7A,B3,C8,3EB
49Ø DATA DD,E1,18,9B
5ØØ DATA 2A,59,9C,11,3A1
51Ø DATA 8Ø,1E,ED,52
52Ø DATA C2,5F,9E,21,3BD
53Ø DATA D5,9D,22,A6
54Ø DATA 9D,DD,E1,11,4A6
55Ø DATA 5Ø,ØØ,Ø6,Ø1
56Ø DATA C3,55,9D,D1,2DD
57Ø DATA 7A,B3,CA,A8
58Ø DATA 9D,D5,DD,E1,5CF
59Ø DATA 13,11,5Ø,ØØ
6ØØ DATA Ø6,Ø3,C3,55,195
61Ø DATA 9D,D1,7A,B3
62Ø DATA C8,DD,E1,21,542
63Ø DATA FF,9E,22,Ø4
64Ø DATA 9E,23,Ø6,Ø3,28D
65Ø DATA C3,55,9D,CD
66Ø DATA ØD,9E,DØ,C3,4CØ
67Ø DATA ØØ,9E,7B,E6
68Ø DATA Ø7,CA,Ø6,9E,374
69Ø DATA 3E,ØØ,C3,ØB
7ØØ DATA 9E,3E,13,3D,238
71Ø DATA 2Ø,FD,A7,Ø4
72Ø DATA C8,3E,F5,DB,49E
73Ø DATA FF,1F,C8,A9
74Ø DATA E6,4Ø,28,F3,4DØ
75Ø DATA 79,2F,4F,3E
76Ø DATA ØØ,ØØ,ØØ,C3,1F8
77Ø DATA 28,9E,37,C9
78Ø DATA 7C,21,57,9C,356
79Ø DATA 86,23,BE,C2
8ØØ DATA 5F,9E,21,7B,3C2
81Ø DATA 9C,11,7C,9C
82Ø DATA Ø1,C2,Ø1,36,2BF
83Ø DATA ØØ,ED,BØ,AF
84Ø DATA Ø6,F6,ED,79,4AE
85Ø DATA Ø1,8C,7F,C3
86Ø DATA ØØ,BE,ØØ,ØØ,28D
87Ø DATA ØØ,ØØ,ØØ,ØØ
88Ø DATA ØØ,ØØ,ØØ,ØØ,ØØØ
89Ø DATA ØØ,FB,Ø6,ØA
9ØØ DATA 76,1Ø,FD,F3,381
91Ø DATA C9,21,61,9E
92Ø DATA AF,77,2B,7C,3B6
93Ø DATA B5,C2,62,9E
94Ø DATA 21,E2,9E,AF,4C7
95Ø DATA 77,23,7C,B5
96Ø DATA 2Ø,F9,AF,Ø6,399
97Ø DATA F6,ED,79,1E
98Ø DATA FF,3E,Ø7,ØE,3CC
99Ø DATA 3B,CD,C4,9E
1ØØØ DATA 3E,Ø5,ØE,ØA,2C5
1Ø1Ø DATA CD,C4,9E,3E
1Ø2Ø DATA ØA,ØE,ØF,CD,361
1Ø3Ø DATA C4,9E,Ø1,E2
1Ø4Ø DATA Ø4,CD,BE,9E,472
1Ø5Ø DATA 3E,Ø5,ØE,Ø5
1Ø6Ø DATA CD,C4,9E,3E,2C3
1Ø7Ø DATA ØA,ØE,ØF,CD
1Ø8Ø DATA C4,9E,Ø1,C4,31B
1Ø9Ø DATA Ø9,CD,BE,9E
11ØØ DATA 1D,2Ø,D5,21,365
111Ø DATA B9,9E,11,ØØ
112Ø DATA ØØ,Ø1,Ø5,ØØ,16E
113Ø DATA ED,BØ,C7,Ø1
114Ø DATA 89,7F,ED,49,4A3
115Ø DATA ØB,78,B1,2Ø
116Ø DATA FB,C9,Ø6,F4,412
117Ø DATA ED,79,Ø6,F6
118Ø DATA ED,78,F6,CØ,57D
119Ø DATA ED,79,E6,3F
12ØØ DATA ED,79,Ø6,F4,4EB
121Ø DATA ED,49,Ø6,F6
122Ø DATA 4F,F6,8Ø,ED,4E4
123Ø DATA 79,ED,49,C9
124Ø DATA D9,Ø5,C2,37,44F
125Ø DATA 9F,13,13,13
126Ø DATA 13,18,ØØ,7B,17E
127Ø DATA FE,F4,2Ø,19
128Ø DATA 21,6D,9F,22,37A
129Ø DATA FE,9D,23,D9
13ØØ DATA 3E,ØE,C3,ØD,3B3
131Ø DATA 9E,D9,21,E2
132Ø DATA 9E,22,FE,9D,4D5
133Ø DATA 29,1E,E8,18
134Ø DATA Ø1,ØØ,16,Ø5,163
135Ø DATA 7B,D6,E8,A7
136Ø DATA 1F,A7,1F,4F,414
137Ø DATA Ø6,ØØ,21,C5
138Ø DATA 9F,Ø9,7E,6F,281
139Ø DATA Ø1,C9,9F,26
14ØØ DATA ØØ,29,29,Ø9,1EA
141Ø DATA 4F,3E,5Ø,91
142Ø DATA 4F,Ø6,Ø9,7A,246
143Ø DATA 16,C6,C3,33
144Ø DATA 9F,D9,C3,ØD,41A
145Ø DATA 9E,78,32,63
146Ø DATA 9F,Ø6,Ø1,7E,2CF
147Ø DATA 12,13,23,7E
148Ø DATA 12,13,23,7E,18C
149Ø DATA 12,13,23,7E
15ØØ DATA 12,1B,1B,1B,129
151Ø DATA 7A,C6,Ø8,57
152Ø DATA 23,ØD,2Ø,Ø7,1F6
153Ø DATA 21,C9,9F,1Ø
154Ø DATA E2,18,Ø5,C8,36Ø
155Ø DATA 1Ø,DD,18,ØØ
156Ø DATA Ø6,ØØ,3E,Ø6,14F
157Ø DATA 3E,Ø6,ØØ,D9
158Ø DATA C3,ØD,9E,D9,364
159Ø DATA 21,C5,9F,Ø6
16ØØ DATA Ø2,7E,E6,Ø7,2F8
161Ø DATA 28,Ø3,35,18
162Ø DATA Ø5,1E,2Ø,16,ØD1
163Ø DATA 4Ø,3D,23,1Ø
164Ø DATA FØ,Ø6,Ø3,1C,1C5
165Ø DATA 3E,Ø8,35,F2
166Ø DATA AØ,9F,3E,Ø5,2EF
167Ø DATA 36,4F,1C,2B
168Ø DATA 35,F2,AØ,9F,332
169Ø DATA 3E,Ø2,36,4F
17ØØ DATA 2B,35,26,ØØ,14B
171Ø DATA 2E,EØ,21,ØØ
172Ø DATA 9E,22,FE,9D,38A
173Ø DATA D9,C3,ØD,9E
174Ø DATA 21,CA,9F,11,3E2
175Ø DATA ØØ,BE,Ø1,21
176Ø DATA ØØ,ED,BØ,21,29E
177Ø DATA EA,9F,11,45
178Ø DATA 9C,Ø1,15,ØØ,291
179Ø DATA ED,BØ,C9,4E
18ØØ DATA 49,43,4B,3Ø,3BB
181Ø DATA Ø8,34,54,68
182Ø DATA 21,71,Ø7,36,1C7
183Ø DATA ØØ,21,F9,5B
184Ø DATA 36,C9,21,4A,2DF
185Ø DATA 3D,36,ØØ,23
186Ø DATA 36,ØØ,D9,E1,286
187Ø DATA 31,F8,BF,E5
188Ø DATA CD,Ø9,B9,CD,529
189Ø DATA Ø3,B9,FB,C9
19ØØ DATA ØA,ØØ,49,9C,36F
191Ø DATA 7E,FD,7E,FD
192Ø DATA 18,ØØ,ØØ,5B,369
193Ø DATA ØØ,ØØ,2A,9E
194Ø DATA DØ,7Ø,ØØ,ØØ,2Ø8
195Ø DATA ØØ,4Ø,ØØ,ØØ
196Ø DATA ØØ,ØØ,ØØ,ØØ,Ø4Ø
197Ø l=1Ø:n=8:a=&9CF6
198Ø RESTORE 1Ø
199Ø WHILE l<196Ø:
   GOSUB 2ØØØ: WEND:
   GOTO 21ØØ
2ØØØ cs=Ø
2Ø1Ø FOR x=1 TO n:READ v$
2Ø2Ø v=VAL("&"+v$)
2Ø3Ø POKE a,v:cs=cs+v
2Ø4Ø a=a+1:NEXT:READ c$
2Ø5Ø c=VAL("&"+c$)
2Ø6Ø IF c<>cs THEN
   PRINT"Data Error in
   line",l;"or";l+1Ø:END
2Ø9Ø l=l+2Ø:RETURN
21ØØ MODE 1:LOCATE 1,11:
   INPUT"Infinite lives ?",a$
211Ø IF UPPER$(a$)<>"Y" THEN
   POKE &9FCD,Ø
212Ø INPUT"No time limit for
jamming missiles ?",a$
214Ø IF UPPER$(a$)<>"Y" THEN
   POKE &9FD2,Ø:POKE &9FD3,Ø
215Ø INPUT"No attacking
   fighter from behind ?",a$
216Ø IF UPPER$(a$)<>"Y" THEN
POKE &9FD7,Ø:POKE &9FDA,Ø
217Ø MODE Ø:BORDER &1A
218Ø FOR a=Ø TO 15:READ a$
219Ø INK a,VAL("&"+a$):NEXT
22ØØ DATA Ød,ØØ,1a,12
221Ø DATA 18,14,Ø2,Ø9
222Ø DATA Ø6,Øe,Ød,Øa
223Ø DATA Øf,ØØ,ØØ,ØØ
224Ø PAPER 2:PEN Ø
225Ø CALL &9CF6
```

Get Dexter II

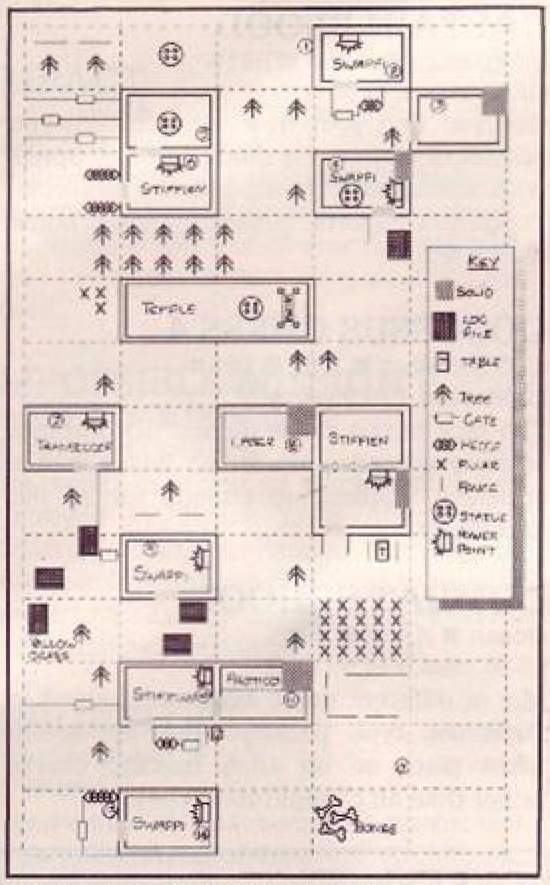
Judith Baxter of Keighley presents this excellent map and playing guide for Infogrames' *Rave* game. Congrats Judith, the goodies are on their way.

SOFTWARE WINNER

The numbers on the map refer to the following:

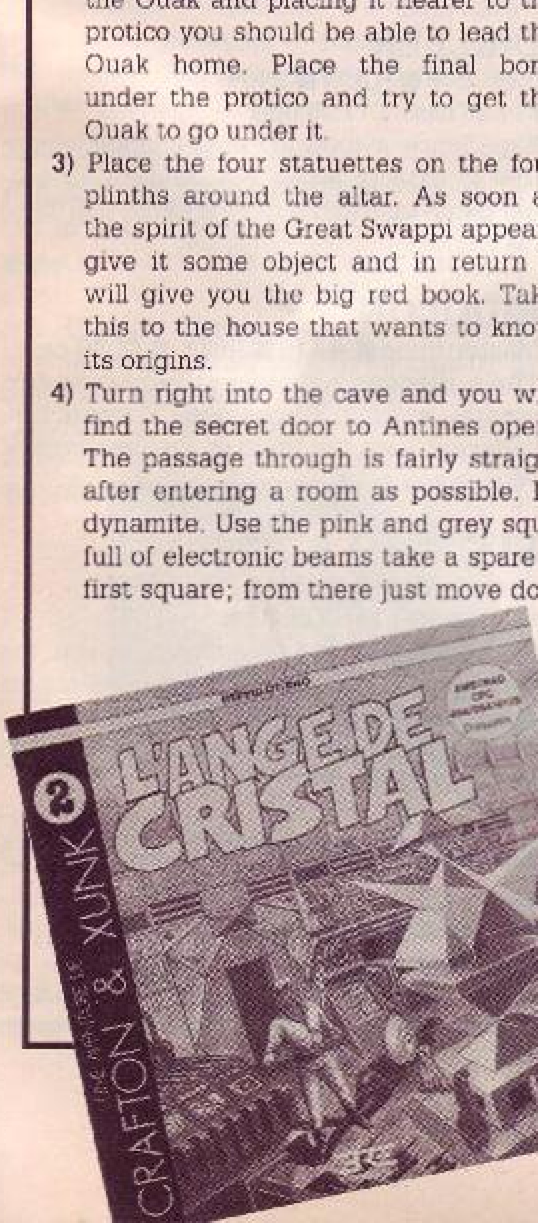
1) Swappi News. Pay attention to your Ouaks! A Stiffien changes their behaviour: in his hands they become frenetic.
2) What are our origins?
3) Four well placed statuettes can free the Great Swappi.
4) The big book tells how the Great Swappi guided his people to Kef.
5) The transducer is a flat machine.
6) The round fruit has curative properties.
7) The yellow grass must be combined with another ingredient.
8) You have to combine two objects on a transducer so that it works.
9) Ill! We are ill. The doctor prescribed an excellent potion. Yes, but where to find it?
1Ø) Ouaks like bones.
11) The Protico is a kit in three parts.
12) Mad Ouak.
13) Place for my Ouak.
14) Lost: Nice little Ouak, with a sane mind. Please return him in good health.
15) All Swappis practice bartering (even the greatest one).

The solution



1) To cure sick Swappis bump into one of the large droopy trees and put the orange fruit that falls out of it onto the transducer. Now find some yellow grass and put that onto the transducer with the fruit: they combine to make the potion. Give this potion to one of the sick Swappis.
2) Take the protico to the 'place for my Ouak' and reassemble it outside the door. Take bones to the 'Mad Ouak" and use them to make a trail to the protico. By removing the bone nearest the Ouak and placing it nearer to the protico you should be able to lead the Ouak home. Place the final bone under the protico and try to get the Ouak to go under it.
3) Place the four statuettes on the four plinths around the altar. As soon as the spirit of the Great Swappi appears give it some object and in return it will give you the big red book. Take this to the house that wants to know its origins.
4) Turn right into the cave and you will find the secret door to Antines open. The passage through is fairly straightforward, but deal with the nasties as soon after entering a room as possible. Destroy the robot with a well aimed stick of dynamite. Use the pink and grey squares to cross the electrified floor. In the room full of electronic beams take a spare statue and jump off the pile of books into the first square; from there just move down to the bottom of the screen, drop the statue and use it to jump over into the section with two statues. Take one of them to the top of that row, and use it jump over to the door.
5) In the room with the barrage of electric devices don't bother trying to get over them, but instead walk through the green screen.

It's straight into the room with the tomb then, repeat the series of notes you hear by walking up to the correct pyramids. The colours help as well. Sit back and watch!





Split Personalities

The very same **Mr Brown** who was in action earlier in *Cheat Mode* also uses Hacker on the disk version of Elite's *Six Pack* game of facial rearrangement to stop the bombs exploding and give you infinite lives. Type in the poke and simply RUN it.

```
1 'Split Person - disk
2 ' by William Brown
3 ' Amstrad Action July 88
1Ø MODE Ø:BORDER Ø
2Ø FOR x=Ø TO 15
3Ø INK x,Ø:NEXT
4Ø LOAD"SPLIT"
5Ø ' stop bombs exploding
6Ø POKE &F786,Ø
7Ø ' infinite lives
8Ø POKE &EF23,1
9Ø CALL &C6ØØ
```

Win an ENTIRE ISSUE'S RAVES!

To win an entire issue's *Rave* software – and that includes the *Mastergame* – all you have to do is produce an excellent map, poke or set of playing tips.

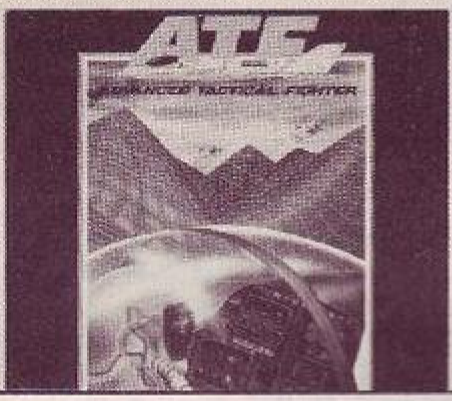
The best solution each month wins a copy of every *Rave* and the *Mastergame* of that issue. The number of games varies of course, but in a good issue it can be half a dozen. We also give runner-up prizes every month of a *Rave* or the *Mastergame*.

This month's winner of the *Raves* and the *Mastergame* is Judith Baxter for her extensive and detailed map and tips for *Get Dexter*. The runners up who receive either a *Rave* or the *Mastergame* are William Brown, David and Sarah Durrent, Phil Howard and Nicola Gavezzeni. Well done all!

AA Buyers Guide
Top 50 Games

ARKANOID II – REVENGE OF DOH
Imagine ■ *AA32* ■ R83%
£8.95 cass ■ £13.95 disk
Follow-up to the *Rave* with plenty of brick-bashing levels to get through before you meet Doh on the final screen. As addictive as its predecessor.

ATF
Digital Integration ■ AA31 ■ M94%
£8.95 cass, £13.95 disk
Strategy game and shoot-em-up combined to provide a long-term challenge and good old fashioned blasting. Promises occupation for many months.



BATTLEFIELD GERMANY
PSS ■ *AA11* ■ 78%
£12.95 cass, £17.95 disk
Wargame set in Europe in the not too distant future. East versus West in classic confrontation. Tests your strategic and tactical skills to the full.

BOBSLEIGH
Digital Integration ■ *AA29* ■ M91%
£9.95 cass, £14.95 disk
Fast action graphics and challenging strategy game combined. Hurtle your way down walls of sheer ice struggling to keep the best line and stay in control.



BOULDERDASH
Prism Leisure Corporation ■ *AA1* ■ R93%
£2.99 cass
The game that turned Rockford into a

Where a game has been re-released as part of a compilation or as a budget title we don't include the original supplier.

Except for the most recent games it is worth looking around for the best price from computer stores, mail-order firms or our own special offers pages.

Key: supplier ■ issue reviewed ■ M: Mastergame/R: Rave; % rating

megastar. He puzzles his way through bewildering screens in search for jewels.

CAPTAIN BLOOD
Infogrames ■ *AA34* ■ R81%
£9.95 cass, £14.95 disk
Can you find your five clones before you run out of vital bodily fluids and die? Speak with aliens and fly around the universe. Tough to complete, but you may get bored after a while.

COLOSSUS CHESS 4
CDS Software ■ *AA8* ■ R92%
£9.95 cass, £13.95 disk
The pick of the chess games. 3D graphics or an overhead view of the board, and a opponent challenging enough for all but grandmasters.

COMBAT SCHOOL
Ocean ■ *AA28* ■ R84%
£8.95 cass, £14.95 disk
Mix of different game styles assembled in *Decathlon* type package. But the action takes place on an army training course rather than an olympic sports field.

CYBERNOID
Hewson ■ *AA32* ■ M91%
£9.99 cass, £14.99 disk ■ AA32 ■ M91%
From the programmer of *Exolon*, Raffaele Cecco, comes another classic with puzzles to solve and aliens to kill. Extra weapons can be picked up and bolted onto your ship to aid the destructive mayhem.



DARKSIDE
Incentive ■ *AA34* ■ R92%
£9.95 cass, £14.95 disk
The Freescape techniques used in *Driller* are enhanced and the pace increased to make a more demanding task. The planet Evath is in danger of destruction unless you can disable the huge weapon, the Zephyr One.

DEFLEKTOR
Gremlin ■ *AA30* ■ M90%
£9.99 cass, £14.99 disk
Frustrating action and mind pounding puzzles against the clock. Clear the screen of blobs with your laser before time runs out or you set off a mine.



DRILLER
Incentive ■ *AA28* ■ R96%
£14.95 cass, £17.95 disk
Experience a total 3D environment you're free to explore anywhere. Add an absorbing game task and you've a game that lasts for months.

EIDOLON
Mastertronic ■ *AA16* ■ R86% ■ £1.99 cass
Trolls, dragons and other strange creatures occupy twisting, 3D passages. Capture fireballs and then fire them at the creatures of your imagination.

ELITE
Firebird ■ *AA5* ■ M94%
£9.95 cass, £12.95 disk
3D vector graphics game with you at the controls of interstellar trading vessel out for fame and fortune. Shoot-em-up action and trading combine to make an incredibly addictive game.

ENLIGHTENMENT – DRUID II
Firebird ■ *AA31* ■ R87%
£8.95 cass, £14.95 disk
Hasrinaxx the Druid returns to defeat Acamantor and his evil allies the Demon

Princes. The druid's faithful companion, golem, is still there and three other elemental beings can be summoned to aid him. Loads more spells to cast and bigger playing area give new and more dangerous quest.

EXOLON

Hewson – Four Smash Hits ■ *AA24* ■ R93%
£9.95 cass, £14.95 disk
125 flick screens packed with problems to solve and aliens to blast. Great graphics and sound add to the fun in shoot-em-up classic.

GAUNTLET/ GAUNTLET II

US Gold ■ *AA16, 28* ■ M93, R90%
£9.99 cass
Fight your way through hundreds of dungeon levels gaining powers and blasting bad guys.



GET DEXTER/ GET DEXTER II

Infogrames ■ *AA8, 30* ■ M94, R88%
£9.95 cass, £14.95 disk
Intriguing puzzles to solve combined with wonderful graphics. Dexter and his podocephalous sidekick demonstrate graphics and gameplay at their best. Two great games from across the channel for the price of one.

HEAD OVER HEELS

Ocean – Magnificent 7
■ *AA20* ■ M95% ■ £9.95 cass, £14.95 disk
Jon Ritman's classic 3D arcade adventure in which Head and Heels can be controlled together or separately. Mind-blowing puzzles, superb detail and colourful graphics – no better anywhere.



GRYZOR

Ocean ■ *AA29* ■ R82%
£8.95 cass, £14.95 disk
A variety of weapons can be picked up to help you blast away at enemies in horizontal scrolling shoot-em-up. Two different stages, each needing different tactics.

HEAVY ON THE MAGICK

Rack It ■ *AA10* ■ M92%
£2.99 cass
Dungeon exploring and spell casting that's only just come out as a budget title. Animation and adventuring at their most absorbing.

HIGHWAY ENCOUNTER

Gremlin – 10 Great Games
■ *AA2* ■ M95%
£9.99 cass, £14.99 disk
Drive along the road in an upturned dustbin as you try to reach zone zero and blow up the alien invaders. Great graphics and sound too.

IKARI WARRIORS

Elite ■ *AA16* ■ R91%
£8.95 cass, £14.95 disk
Classic two-player shoot-out: battle with soldiers, tanks and helicopters. And climb into a tank yourself to cause massive devastation.

IMPACT

Audiogenic ■ *AA34* ■ R81%
£9.95 cass, £14.95 disk
80 increasingly difficult levels of brick bashing action. Special powers activated by collecting the staple like objects that fall from some the blocks. Screen designer if you get bored.

IMPOSSIBLE MISSION II

Epyx ■ *AA33* ■ R85%
£9.99 cass, £14.99 disk
The world is again in danger of being destroyed by insane Elvin Atombender. Platforms must be jumped and robotic guards avoided as you find clues to venture deeper into Elvin's headquarters. Objects to find and help you in your mission.

KNIGHTLORE

Ricochet ■ *AA1* ■ 95%
£1.99 cass
Grand-daddy of all isometric 3D games: you try to rid yourself of curse of lycanthropy. Still plays superbly.

LORDS OF MIDNIGHT

Amsoft ■ *AA1* ■ R91%
£9.95 cass, £11.95 disk
Great graphics and atmosphere distinguish this classic strategy /wargame. Defeat Doomdark by completing a quest or through all out war.

MAGIC KNIGHT TRILOGY

Mastertronic (MAD)
■ *AA6, 11, 23* ■ R90%, M95%, R88%
£2.99 (each) cass
Spellbound, *Knight Tyme* and *Stormbringer* all featuring Magic Knight and the "windimation" control system for interacting with objects and characters. Amazing value.

MARSPORT

Rack It ■ *AA3* ■ M95%
£2.99 cass
Wander streets of the Mars base solving problems and blasting away at Sept warriors with laser gun. Gargoyle puzzling at its trickiest.



MATCHDAY II

Ocean ■ *AA28* ■ R86%
£8.95 cass, £14.95 disk
Soccer with loads of options and tactics. Up to eight people can play. Great graphics, crowd pleasing action, new ed's fave.

MERCENARY

Novagen ■ *AA20* ■ R86%
£9.95 cass, £17.95 disk
3D vector graphic adventure: escape from planet Targ. Second city available on disk and soon on cassette.

NEBULUS

Hewson ■ *AA33* ■ M93%
£9.99 cass, £14.99 disk
Strange towers have sprung up all over watery world of Nebulus. Pogo has the demolition job and must climb up the towers before they can be knocked down. The occupants of the towers try to stop him. Hours of frustration before you manage to destroy all the towers.

PIRATES

Microprose ■ *AA32* ■ R76%
£19.95 disk/6128 only
Expensive and only available on disk, but an excellent strategy game. There are plenty of options and difficulty levels that keep you sailing the Spanish Main. Well packaged with map and detailed instruction book.

RANARAMA

Hewson – Four Smash Hits
■ *AA21* ■ R91%
£9.95 cass, £14.95 disk
Gauntlet type game only you're a frog (!) exploring huge network of passages. Hordes of monsters and spells as you quest to turn yourself back.

REBELSTAR

Firebird ■ *AA18* ■ 82%
£1.99 cass, £4.99 disk
One/two player strategy set in the far future: control a mixed army of droids and humans and try to defend or attack base.

RED L.E.D.

Ariolasoft ■ *AA27* ■ M92%
£9.99 cass, £14.99 disk
Three droids with different abilities try to make a path across a grid of hexagons from left to right. Each hexagon has a landscape full of difficulties and danger.

RENEGADE

Imagine ■ *AA25* ■ R90%
£8.95 cass, £14.95 disk
Mindless bash-em-up with five levels to kick and punch through. Wonderful graphics and animation – a combat classic.

SENTINEL

Firebird ■ *AA19* ■ R90%
£9.95 cass, £14.95 disk
One of the most original concepts ever. 10,000 landscapes where you defeat the sentinel by getting higher than him. Gameplay on a higher plane.

SPACE HARRIER

Elite ■ *AA17* ■ R90%
£8.95 cass, £14.95 disk
Action so fast if you blink you miss it. Fast reflexes essential as you whizz across the surface of many weird alien planets.

SPINDIZZY

Beau Jolly – Comp Hits 10 vol. 4
■ *AA6* ■ M96%
£9.95 cass, £13.95 disk
200 screens plus with interconnected puzzles to solve and hazards to avoid in a race against the clock. State-of-the-art gameplay and puzzles.

SPY vs SPY

Databyte ■ *AA32* ■ R81%
£9.95 cass, £14.95 disk
The two spies straight from the pages of mad magazine battle it out in a three game compilation of their exploits.

The *Island Caper* and *Arctic Antics* are previously unreleased titles – both of which are very good – and the original *Spy vs Spy* is thrown in with the package too. Excellent value for money even if you have *Spy vs Spy* already.

TAU CETI

Beau Jolly – Five Star Games III
■ *AA7* ■ R88%
£9.95 cass, £14.95 disk
Collect fuel rods as you strive to shut down a nuclear reactor. Battle the planet's defences until all the rods are yours and you can shut the planet down.

Also watch out for *Academy*, a brilliant sequel costing £9.95 cass, £14.95 disk, from CRL.

STARGLIDER

Rainbird ■ *AA17* ■ M91%
£14.95 cass, £19.95 disk
Vector graphic shoot-em-up with difficulty, speed, addiction and difficulty. Overwhelming odds confront you but skilled pilots accept the challenge.

THEATRE EUROPE

PSS ■ *AA5* ■ R86%
£4.99 cass, £9.99 disk
The war to end all wars, and if you're not careful life on this planet. Superb atmosphere, difficult decisions and lots of strategy hallmark this wargame.

THRUST

Firebird ■ *AA12* ■ R94%
£1.99 cass, £4.99 disk
Retrieve the pods with your asteroids style space ship, blow the reactor up and fly away from the planet in this game of blasting and manoeuvering. Gameplay that's truly out of this world.

TOMAHAWK

Digital Integration
■ *AA8* ■ R92%
£9.95 cass, £14.95 disk
Absolutely brilliant flight simulator that puts you in the pilot's seat of an Apache helicopter. Fly hair-raisingly dangerous missions and enjoy those lovely graphics as you go.

VENOM STRIKES BACK

Gremlin ■ *AA33* ■ R81%
£9.99 cass, £14.99 disk
This is the third game based on the *Mask* cartoon series and it's probably the best of them. It's basically just a shoot-em-up, but there are elements of problem solving that add to the game's appeal. Simple enjoyable stuff, though it lacks on the mental side.

WIZBALL

Ocean – Magnificent 7 ■ *AA25* ■ M92%
■ £9.95 cass, £14.95 disk
Six levels to explore as you try to restore colour to the landscapes with your faithful servant Catelite. Wacky control and graphics that get better the better you do.



WORLD CLASS LEADER-BOARD

US Gold ■ *AA26* ■ R84%
£9.99 cass, £14.99 disk
The best golfing simulation ever, with a wide range of clubs and courses to play a round on.

XOR

Logotron ■ *AA26* ■ M91%
£9.95 cass, £14.95 disk
16 levels of problems with masks, fish, chickens *(chickens?)* and other hazards to halt your progress. They'll confuse, delight, frustrate and ultimately give great joy.

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But that's not all. To make sure you get a proper AA kick-off we are giving away one of these four US Golld games - your copy will arrive two days after your subscription order. And more than that, in a moment of pure folly we are throwing in a copy of the original Impossible Mission to 464 owners! We can't do more than that for you. But you have to want that machine to come alive. Contact us on (0458) 74011 or fill in the order form on the left of this page.

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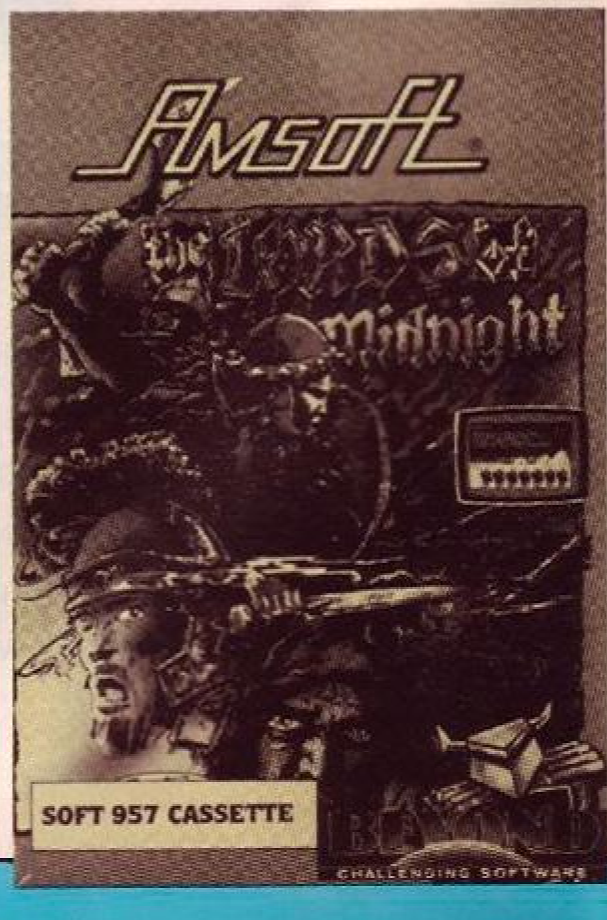
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EXTRA SUBSCRIPTION GIFT FOR CASSETTE USERS!

As if one free game wasn't enough, here's another: a free copy on cassette of the huge, multi-character epic Lords of Midnight. This title, by top programmer Mike Singleton, was raved over in the very first issue of Amstrad Action. After two years it's still a classic offering hours of very special entertainment. Set in an immense, beautifully depicted landscape you have to take on invading armies of Doomdark by controlling four different characters.

We'll include it as a bonus to every new subscriber who opts for the *cassette* version of one of the other games high-lighted on this page. (Sorry, disk users, but you're getting an expensive enough gift as it is!)



FREE!
A blank 3 inch disk is included when you buy *Hackers Handbook III* through these pages - at no extra

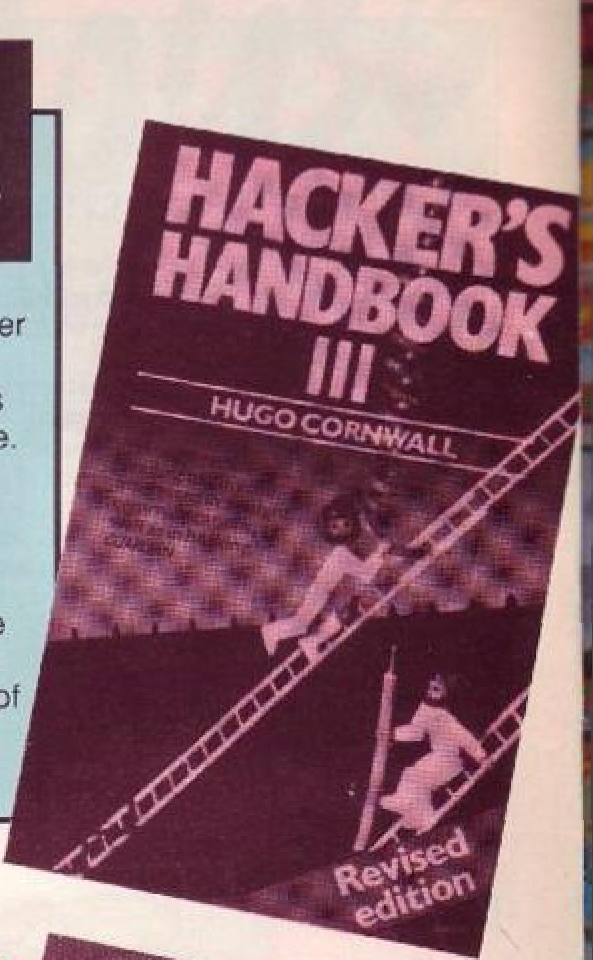
HACKERS HANDBOOK III

by Hugo Cornwall
£6.95
Century Hutchinson

This is it! The Know-All book about hacking - the art of exploring other peoples computer systems - that will shock you with its frankness. When *The Hacker's Handbook* first appeared in 1985 it caused a storm of interest and went straight into the best-seller lists because it revealed so much about the way computer systems across the world operate. This updated edition shows that, as computers emerge into mainstream life, the computer security consultant has become an essential part of business, military and political life.

Hackers Handbook III looks at modems, Prestel-type information systems and networks. It discusses some of the most famous incidents of the last ten years, from the Prince Phillip Prestel mailbox hack of 1984 to the millions of pounds that are lost by the banks and building societies annually. All together, if you want to learn about the world of comms infiltration then we can recommend no better way to get started.

Order Code A343



Imagine's TARGET RENEGADE

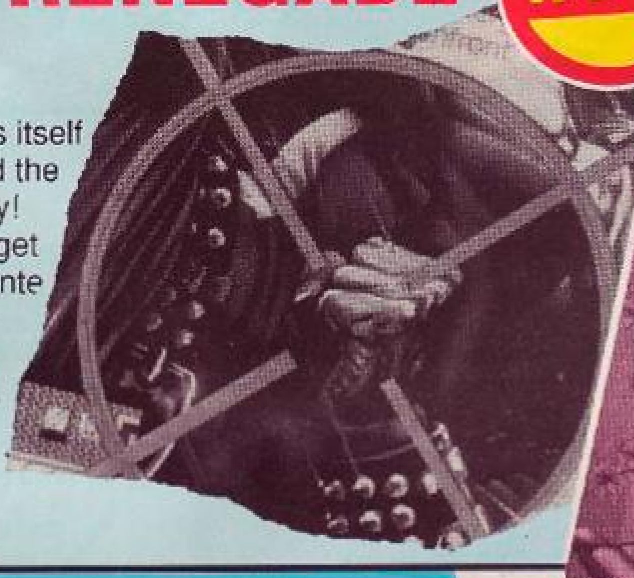
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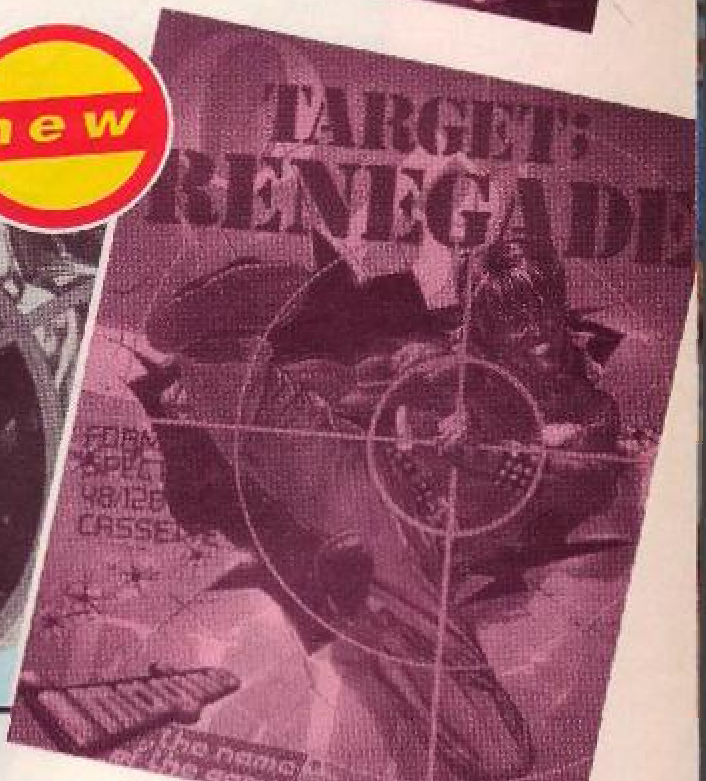
£6.95 tape (RRP £8.95)
£11.95 disk (RRP £14.95)

Yes! This month's AA Mastergame finds itself instantly in the mail order pages. So read the review earlier in this issue before you buy! Basically a Taito coin-op conversion, Target Renegade is set in the world of the vigilante where there is only one man who can challenge the rule of evil - and there's a price on his head!

Go for it - if you dare.

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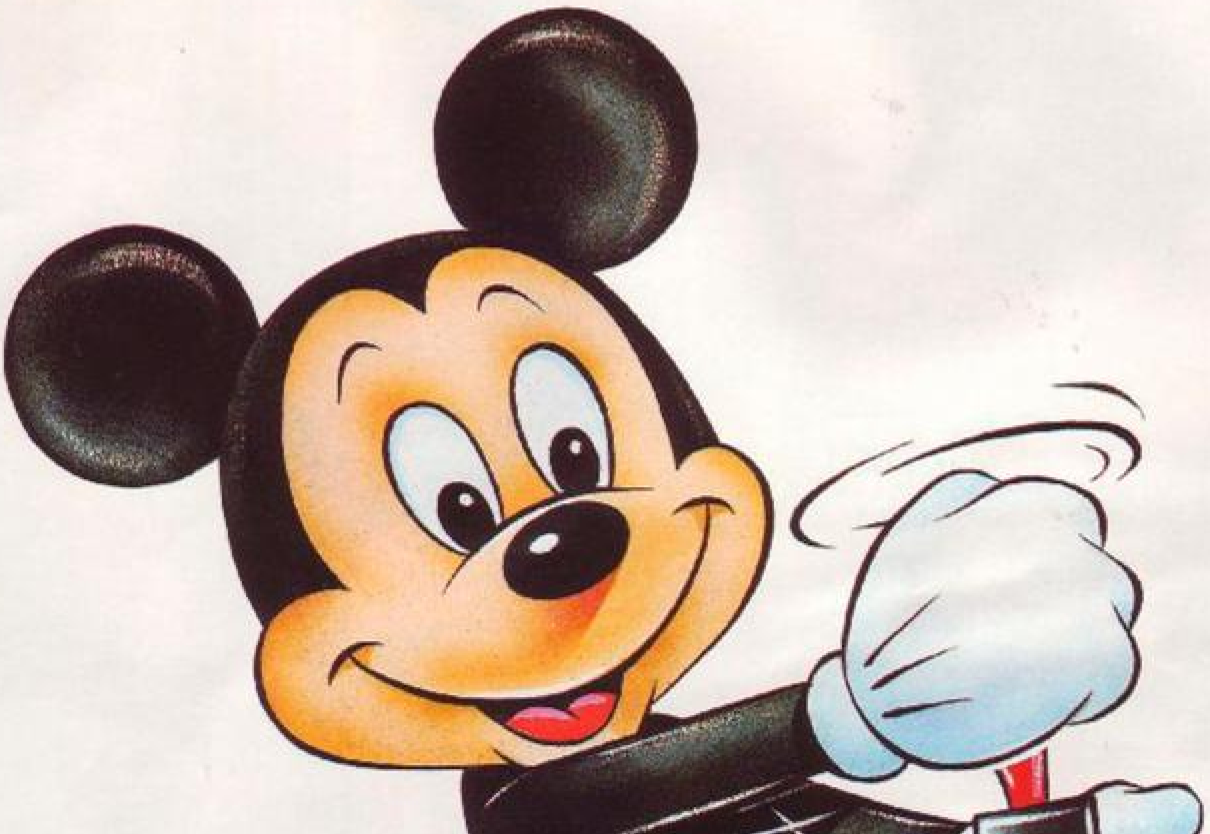
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Issues 8 and 16 may be of particular interest, as both include free cassettes packed with good software. Two series also went down very well. Andrew Wilton's programming course in Basic for absolute beginners ran from issues 8-17, while a series of articles on the CP/M operating system ran from 10-17. All issues contain numerous game reviews, Type-Ins and Pokes.

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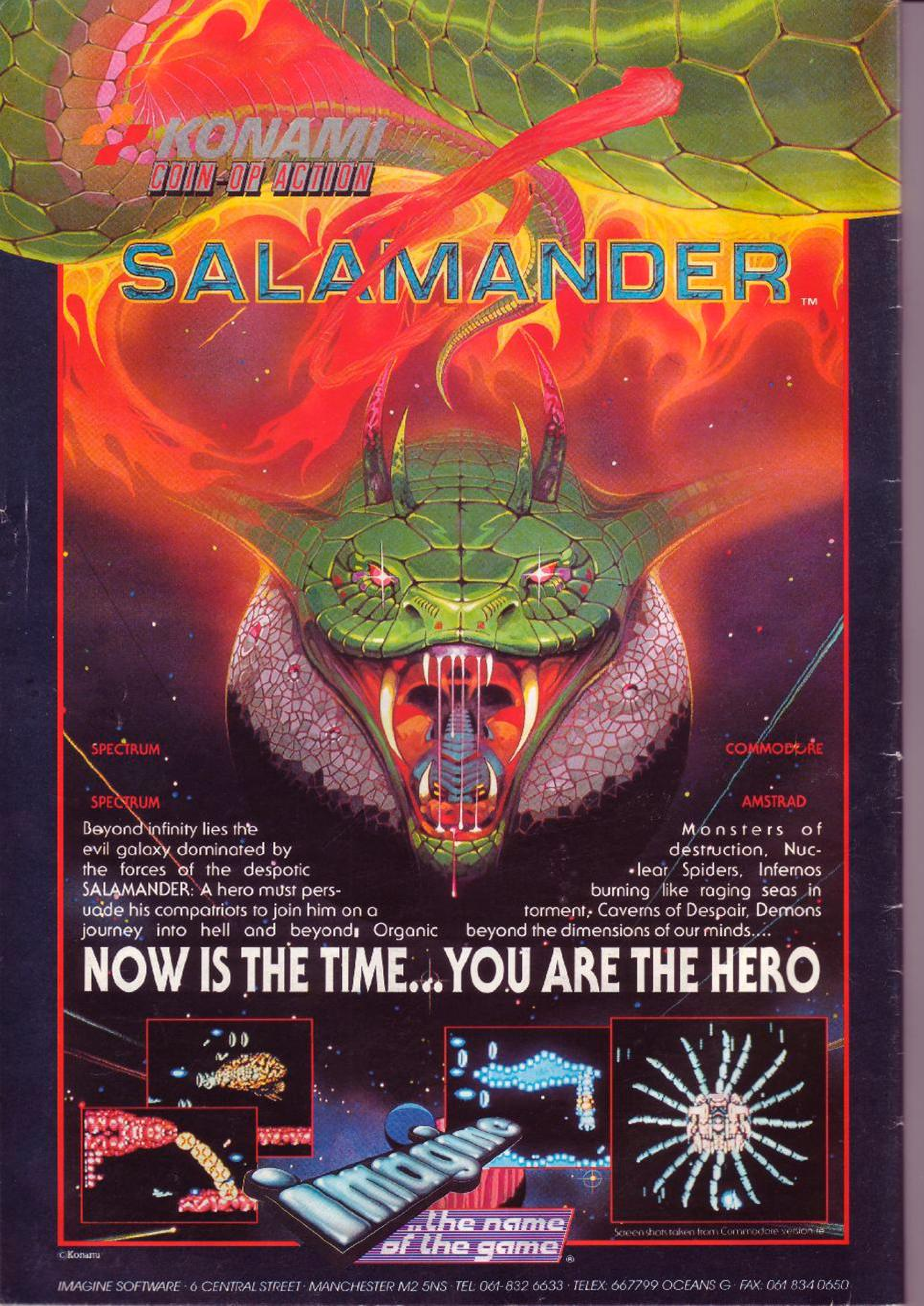
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